Allworx®
Server Administrator's Guide
Release 7.5

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Allworx Server Administrator's User Guide

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A caution statement in this manual identifies a condition or practice, which if not corrected or discontinued immediately, could lead to equipment failure, equipment damage, or data loss.

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1 Introduction

1.1 Who Should Read This Guide

This guide is to be read by people who will be installing and maintaining Allworx servers. The reader is expected to have a computer networking and basic telephony background and to have completed the Allworx Partner technical training.

1.2 Purpose

The Allworx server web administration interface has built-in descriptions, help, and tips on many of its pages. Therefore, not all the features or all the parameters of each feature are discussed here. This guide discusses only those features and parameters that require additional explanation beyond what is on the web pages.

This manual applies to Allworx System Software Release 7.5. The following are additional documents related to Allworx server software release 7.5:

- Allworx User's Guide, Release 7.5.
- Allworx Server Software Release Notes, Release 7.5
- Allworx Phone Guides
- Allworx Queuing and Automated Call Distribution Guide, Release 7.5
- Allworx Advanced Multi-site Setup Guide, Release 7.5
- Multi-Tech FaxFinder Setup Application Notes
- Allworx SNMP User's Guide, Release 7.5

These publications as well as System Administrator's Guides for Releases 7.4 and lower are available on the Allworx Partner Portal (www.allworxportal.com).

1.3 Allworx Family of Servers

The award-winning Allworx family of servers includes the Allworx 6x, 6x12, Allworx 24x, and Allworx 48x servers. The servers differ in features and capabilities. The table below depicts which Allworx server offers which capabilities:

Feature	Allworx 6x12	Allworx 6x	Allworx 24x	Allworx 48x
Number of users	12	30 (up to 60 with Feature Key)	24 (up to 250 with Feature Key)	48 (up to 250 with Feature Key)
CO Lines	6 FXO Ports	6 FXO Ports	3 FXO Ports	3 FXO Ports
T1 Support	N/A	N/A	Integrated single PRI or RBS	Integrated NFAS, Dual PRI or RBS
Extensions	24	60 (up to 120 with Feature Key)	48 (up to 500 with Feature Key)	96 (up to 500 with Feature Key)
Analog phones	2 FXS Ports	2 FXS Ports	5 FXS Ports	5 FXS Ports
VoIP	SIP 2.0	SIP 2.0	SIP 2.0	SIP 2.0
Multi-site	Branch site only	100 Sites	100 Sites	100 Sites
Voicemail	8-port Voicemail	8-port Voicemail	16-port Voicemail	16-port Voicemail
Presence Management	7 per User with Individual Greetings	7 per User with Individual Greetings	7 per User with Individual Greetings	7 per User with Individual Greetings
Auto Attendants	9	9	9	9
Conference Bridges	One (1) 8-seat Bridge	One (1) 8-seat Bridge	Four (4) 8-seat Bridges	Four (4) 30-seat Bridges
Door Relay	Included	Included	Included	Included
Paging Output	Included	Included	Included	Included
Paging Zones	10 Customizable Zones	10 Customizable Zones	10 Customizable Zones	10 Customizable Zones
Storage	Compact Flash	Compact Flash	Hard Disk with Mirror Option	Solid State Drive
Email SMTP Server	Supported with Optional External USB Hard Drive	Supported with Optional External USB Hard Drive	Supported	Supported with Optional External USB Hard Drive
Email POP3 Server	Included	Included	Included	Included
Email IMAP4 Server	Enabled by Mobile Link Feature Key	Enabled by Mobile Link Feature Key	Enabled by Mobile Link Feature Key	Enabled by Mobile Link Feature Key
Unified	Included	Included	Included	Included

Feature	Allworx 6x12	Allworx 6x	Allworx 24x	Allworx 48x
Messaging				
Network Integration	LAN: Ethernet WAN: Ethernet, PPPoE	LAN: Ethernet WAN: Ethernet, PPPoE	LAN: Ethernet WAN: Ethernet, T1, PPPoE	LAN: Ethernet WAN: Ethernet, T1, PPPoE
Automatic Call Distribution	N/A	10 queues; 16 total calls in all queues	10 queues; 32 total calls in all queues	10 queues; 64 total calls in all queues
Firewall Security	Stateful Packet Inspection	Stateful Packet Inspection	Stateful Packet Inspection	Stateful Packet Inspection
Call Assistant	Available	Available	Available	Available
Mobile Link	Available	Available	Available	Available
VPN	One user Included	One user Inc. Multi-user Available	One user Inc. Multi-user Available	One user Inc. Multi-user Available
Audio Prompt Languages	English; Castilian Spanish, French Canadian available	English; Castilian Spanish, French Canadian available	English; Castilian Spanish, French Canadian available	English; Castilian Spanish, French Canadian available

2 Accessing Web Administration

For upgrades to the software on the server, navigate to the **Maintenance** > **Update** web administration page. Supported web browsers for Allworx server administration include:

- IE 8, 9
- Google Chrome (Latest Release)
- Modzilla Firefox (Latest Release)

The administrative interface to the Allworx server is accessed using a web browser via the LAN interface on TCP port 8080. If the network settings are set to the factory defaults, connect to this interface:

1. Plug the PC into the server's LAN port.
2. Set up the network interface on the PC to obtain an IP address automatically (using DHCP).
3. Verify that the PC has an IP address on the 192.168.2.x network. It may be necessary to release and renew the IP address on the PC to get an address from the server.
4. Click **Start** and type cmd in the Search field. A command window opens.
    a. Type ipconfig /release at the prompt and press enter. This clears the current IP settings from the PC.
    b. Type ipconfig /renew at the prompt and press enter. This obtains a new IP address for the PC.
5. Open the browser and enter the URL http://192.168.2.254:8080. When the Welcome to Allworx page displays, log in using "admin" as the default username and password.

When the Allworx server mode is set to NAT/Firewall, NAT/Firewall with DMZ or NAT/Firewall with Stealth DMZ, the administrative interface to the Allworx server may also be accessed via the WAN interface on TCP port 8080. Enable this feature by clicking the checkbox labeled **Allow admin configuration on WAN interface** on the Network Configuration page. After enabling this feature and rebooting the Allworx server, open your browser and enter the URL of http://<Server WAN IP Address>:8080.

Note: The WAN administrative option is not available with T1 or PPPoE WAN configurations.

2.1 User Roles

User Permission Levels enable the Allworx Server Administrator to delegate portions of management of the Allworx server to one or more users. Users perform these management tasks using the existing Allworx administration pages with access to the areas in which they have permission using their username and password.

- **Server Administrator**: access to manage all functions of the server. The Allworx Server Administrator assigns roles, manages the server administrative functions, manages day-to-day phone system settings, manages the network and VoIP settings, and initiates system backups and/or reboots.
- **System Administrator**: access to manage the administrative functions of the server. The user permission setting does not enable this role to change the password of the Allworx Server Administrator. However, the Allworx Server Administrator can change the password of the System Administrator.
- **Phone Administrator**: access to manage day-to-day phone system settings including changes to system recordings as well as adding, changing and deleting users, extensions, and handsets.
- **Network Administrator**: access to manage the Network and VoIP settings, as well as outside lines, SIP proxies and SIP gateways.
- **Support Technician**: access to initiate system backups and reboots as well as managing logging operations.

Note: To enable one user to have roles on different servers in a multi-site network, the Allworx Server Administrator must create separate user accounts for the user on each server, and then assign the roles on each server. Use different usernames for each user account.

To assign user roles:

1. Log into the server web page and enter the username and password.
2. Navigate to **Business** > **Roles**. The roles page displays.
3. Click the **+** next to the role to change. The Allworx Server Administrator sees a list of assigned users for that role. The Allworx Server Administrator can assign the role to any available system users.
4. Select the user from the list, and do one of the following:
   a. Click the **Assign Role** button to assign the role to the user. The designated users have access to the administration functions that are included in the roles.
   b. Click the **Remove Role** button to remove the user from the assigned role.

   When changing a user's role and the user is logged into the system, the system requires the user to log out of the server and re-login in order to access the changes.

2.2 Role Permissions

Allworx Server Page	Link	Phone	Network	Support
Home	About	Yes	Yes	Yes
Home	Emergency Number Dialing rules "set"	Yes	No	No
Home	Phone System	Yes	Yes	Yes
Home	Business	Yes	Yes	Yes
Home	Network	Yes	Yes	Yes
Home	Servers	Yes	Yes	Yes
Home	Reports	Yes	Yes	Yes
Home	Maintenance	Yes	Yes	Yes
Home	Need Help?	No	No	No
Home	Install Checklist	No	No	No
Home	Logout	Yes	Yes	Yes
Phone System	Audit PIN Codes	Yes	No	No
Phone System > Audit PIN Codes	Audit PIN Codes - add new PIN Code	Yes	No	No
Phone System > Audit PIN Codes	Audit PIN Codes - Dialing Rules / "Modify"	No	No	No
Phone System > Audit PIN Codes	Audit PIN Codes - modify	Yes	No	No
Phone System > Audit PIN Codes	Audit PIN Code Configuration - Modify	Yes	No	No
Phone System > Audit PIN Codes	Audit PIN Code Configuration - Delete	Yes	No	No
Phone System	Auto Attendants	Yes	No	No
Phone System > Auto Attendants	"Manage" the custom recordings link	Yes	No	No
Phone System > Auto Attendants	"View" and manage the Language settings for the Auto Attendants	No	No	No
Phone System > Auto Attendants	Auto Attendant n "modify"	Yes	No	No
Phone System	Call Monitors	Yes	No	No
Phone System > Call Monitors	Call Monitors "Modify"	Yes	No	No

Allworx Server Page	Link	Phone	Network	Support
Phone System	Call Park	Yes	No	No
Phone System > Call Park	Call Park "modify"	Yes	No	No
Phone System > Call Park	Multi-Site Parking "modify"	Yes	No	No
Phone System	Call Queues	Yes	No	No
Phone System > Call Queues	"manage" the custom recordings link	Yes	No	No
Phone System > Call Queues	"View" and manage the Language settings for the Auto Attendants	No	No	No
Phone System > Call Queues	Call Queue n "Modify"	Yes	No	No
Phone System > Call Queues	Queue Streaming Settings "modify"	Yes	No	No
Phone System > Call Queues	Queue Busy Reasons "modify"	Yes	No	No
Phone System	Conference Center	Yes	No	No
Phone System > Conference Center	Conference X "modify"	Yes	No	No
Phone System	Dial Plan	Yes	No	No
Phone System > Dial Plan	[Reboot phones]	Yes	No	No
Phone System > Dial Plan	Internal Extension Length "modify"	Yes	No	No
Phone System > Dial Plan	Internal Dial Plan "modify"	Yes	No	No
Phone System > Dial Plan	Internal Dial Plan "view" phone functions reference card	Yes	No	No
Phone System > Dial Plan	External Dialing Rules "modify" NANPA	Yes	No	No
Phone System > Dial Plan	External Dialing Rules "modify" Area Code / Exchange	Yes	No	No
Phone System > Dial Plan	External Dialing Rules "modify" Emergency	Yes	No	No
Phone System > Dial Plan	External Dialing Rules "modify" Emergency Call Email Notification	Yes	No	No
Phone System > Dial Plan	External Dialing Rules "modify" Type / Service Group	No	No	No
Phone System > Dial Plan	Dialing Privileges Groups "view"	Yes	No	No

Allworx Server Page	Link	Phone	Network	Support
Phone System > Dial Plan	Dialing Privileges Groups "copy"	Yes	No	No
Phone System > Dial Plan	Dialing Privileges Groups "modify"	Yes	No	No
Phone System > Dial Plan	Dialing Privileges Groups "delete"	Yes	No	No
Phone System > Dial Plan	Service Groups "add new Service Group"	Yes	No	No
Phone System > Dial Plan	Service Groups "modify"	Yes	No	No
Phone System > Dial Plan	Service Groups "copy"	Yes	No	No
Phone System > Dial Plan	Service Groups "delete"	Yes	No	No
Phone System	Emergency CID	Yes	No	No
Phone System > Emergency CID	Emergency Caller ID Number "add new Caller ID Number"	Yes	No	No
Phone System > Emergency CID	Emergency Caller ID Number "Modify"	Yes	No	No
Phone System > Emergency CID	Emergency Caller ID Number "Delete"	Yes	No	No
Phone System > Emergency CID	Handset Emergency Caller ID Numbers "modify"	Yes	No	No
Phone System	Extensions	Yes	No	No
Phone System > Extensions	Extensions "add new Extension"	Yes	No	No
Phone System > Extensions	Extensions "View Call Routes"	Yes	No	No
Phone System > Extensions	Extensions "Delete"	Yes	No	No
Phone System > Extensions	Extensions "username"	Yes	No	No
Phone System > Extensions	Extensions - Bulk Edit	Yes	No	No
Phone System	Handsets	Yes	No	No
Phone System > Handsets	Analog Handsets "new analog handset"	Yes	No	No
Phone System > Handsets	Analog Handsets "modify"	Yes	No	No
Phone System > Handsets	Analog Handsets "delete"	Yes	No	No
Phone System > Handsets	Analog Handsets "ring"	Yes	No	No
Phone System > Handsets	SIP Handsets - [Reboot Allworx Handsets]	Yes	No	No
Phone System > Handsets	SIP Handsets - "add new	Yes	No	No

Allworx Server Page	Link	Phone	Network	Support
	Allworx Handset"			
Phone System > Handsets	SIP Handsets - "add new Allworx Reach Handset"	Yes	No	No
Phone System > Handsets	SIP Handsets - "add new Generic SIP Handset"	Yes	No	No
Phone System > Handsets	SIP Handsets - Bulk Edit	Yes	No	No
Phone System > Handsets	SIP Handsets "handset preference group"	Yes	No	No
Phone System > Handsets	SIP Handsets "View" Configuration	Yes	No	No
Phone System > Handsets	SIP Handsets "Add" Call Appearance	Yes	No	No
Phone System > Handsets	SIP Handsets "Reboot"	Yes	No	No
Phone System > Handsets	SIP Handsets "Replace"	Yes	No	No
Phone System > Handsets	SIP Handsets "Modify"	Yes	No	No
Phone System > Handsets	SIP Handsets "Delete"	Yes	No	No
Phone System > Handsets	SIP Handsets "Ring"	Yes	No	No
Phone System > Handsets	Handset Preference Groups "View"	Yes	No	No
Phone System > Handsets	Handset Preference Groups "Copy"	Yes	No	No
Phone System > Handsets	Handset Network Profile Templates "View"	Yes	No	No
Phone System > Handsets	Handset Network Profile Templates "Copy"	Yes	No	No
Phone System > Handsets	Handset Configuration Templates "View"	Yes	No	No
Phone System > Handsets	Handset Configuration Templates "Activate"	Yes	No	No
Phone System > Handsets	Handset Configuration Templates "Delete"	Yes	No	No
Phone System	Languages	Yes	No	No
Phone System > Languages	"Export" Primary/Secondary Language recordings	Yes	No	No
Phone System > Languages	"Import" Primary/Secondary Language recordings	Yes	No	No
Phone System > Languages	Language Pack Installation and Removal	No	No	No

Allworx Server Page	Link	Phone	Network	Support
Phone System > Languages	Server Language Configuration	No	No	No
Phone System > Languages	Call Application Language Settings	No	No	No
Phone System	Music On Hold	Yes	No	No
Phone System > Music On Hold	Music On Hold "manage"	Yes	No	No
Phone System > Music On Hold	File Statistics	Yes	No	No
Phone System > Music On Hold	Music On Hold Sources "Usage"	Yes	No	No
Phone System	Outside Lines	Yes	Yes	No
Phone System > Outside Lines	Anonymous Call Handling "modify"	Yes	No	No
Phone System > Outside Lines	Analog (CO) Lines	Yes	No	No
Phone System > Outside Lines	Analog (CO) Lines "New FXO Line"	Yes	No	No
Phone System > Outside Lines	Analog (CO) Lines "Modify"	Yes	No	No
Phone System > Outside Lines	Analog (CO) Lines "Delete"	Yes	No	No
Phone System > Outside Lines	Digital Lines "Modify"	Yes	No	No
Phone System > Outside Lines	Direct Inward Dial Blocks - "add new DID Block"	Yes	No	No
Phone System > Outside Lines	Direct Inward Dial Blocks "modify"	Yes	No	No
Phone System > Outside Lines	Direct Inward Dial Blocks "delete"	Yes	No	No
Phone System > Outside Lines	Direct Inward Dial Routing Plans "Details"	Yes	No	No
Phone System > Outside Lines	Direct Inward Dial Routing Plans "Delete"	Yes	No	No
Phone System > Outside Lines	SIP Gateways "add new SIP Gateway"	No	Yes	No
Phone System > Outside Lines	SIP Gateways "modify"	No	Yes	No

Allworx Server Page	Link	Phone	Network	Support
Phone System > Outside Lines	SIP Gateways "delete"	No	Yes	No
Phone System > Outside Lines	SIP Proxies "add new SIP Proxy"	No	Yes	No
Phone System > Outside Lines	SIP Proxies "modify"	No	Yes	No
Phone System > Outside Lines	SIP Proxies "delete"	No	Yes	No
Phone System	Paging	Yes	No	No
Phone System > Paging	Paging Amplifier "modify"	Yes	No	No
Phone System > Paging	Paging Zone Names "modify"	Yes	No	No
Phone System > Paging	Paging Zones "modify"	Yes	No	No
Phone System	Shared Appearance	Yes	No	No
Phone System > Shared Appearance	Shared Appearance "add new shared call appearance"	Yes	No	No
Phone System > Shared Appearance	Shared Appearance "modify"	Yes	No	No
Phone System > Shared Appearance	Shared Appearance "show handsets"	Yes	No	No
Phone System > Shared Appearance	Shared Appearance "delete"	Yes	No	No
Phone System	Speed Dial	Yes	No	No
Phone System > Speed Dial	Speed Dial Numbers "add new Speed Dial Number"	Yes	No	No
Phone System > Speed Dial	Speed Dial Numbers "Modify"	Yes	No	No
Phone System > Speed Dial	Speed Dial Numbers "Delete"	Yes	No	No
Business	Contact Information	Yes	No	No
Business | Contact Information	Contact Information "Modify"	Yes	No	No
Business	Message Aliases	Yes	No	No
Business > Message Aliases	Message Aliases "add new alias"	Yes	No	No
Business > Message Aliases	Message Aliases "modify"	Yes	No	No
Business > Message Aliases	Message Aliases "delete"	Yes	No	No
Business	Roles	Yes	No	No
Business > Roles	System Administrator	No	No	No

Allworx Server Page	Link	Phone	Network	Support
Business > Roles	Network Administrator	No	No	No
Business > Roles	Phone Administrator	Yes	No	No
Business > Roles	Support Technician	No	No	No
Business > Roles | System Administrator	[Assign Role] [Remove Role]	No	No	No
Business > Roles > Network Administrator	[Assign Role] [Remove Role]	No	No	No
Business > Roles > Phone Administrator	[Assign Role] [Remove Role]	Yes	No	No
Business > Roles > Support Technician	[Assign Role] [Remove Role]	No	No	No
Business	Schedules	Yes	No	No
Business > Schedules	Greetings "modify"	Yes	No	No
Business > Schedules	Schedule n [Copy]	Yes	No	No
Business > Schedules	Schedule n [Delete]	Yes	No	No
Business > Schedules	Schedule n "modify"	Yes	No	No
Business > Schedules	Schedule n "add holiday"	Yes	No	No
Business > Schedules	Schedule n "copy holiday"	Yes	No	No
Business > Schedules	Schedule n "delete" holiday	Yes	No	No
Business > Schedules	Schedule n "modify" holiday	Yes	No	No
Business	Users	Yes	No	No
Business > Users	Users "add new user"	Yes	No	No
Business > Users	Users "modify"	Yes	No	No
Business > Users	Users "delete"	Yes	No	No
Business > Users	Users "delete messages"	Yes	No	No
Business > Users	Users "delete recordings"	Yes	No	No
Business > Users	Users "EXTENSION"	Yes	No	No
Business > Users	Users - Bulk Edit	Yes	No	No
Business > Users	Users - "show"/"hide" templates last applied to user	Yes	No	No
Business > Users	User Templates "View"	Yes	No	No
Business > Users	User Templates "Copy"	Yes	No	No
Business > Users	User Templates "Delete"	Yes	No	No
Business > Users	Password Requirements	No	No	No

Allworx Server Page	Link	Phone	Network	Support
	"modify"			
Network	Configuration	No	Yes	No
Network > Configuration	Configuration "modify"	No	Yes	No
Network	Digital Lines	No	Yes	No
Network > Digital Lines	NFAS Lines "modify"	No	Yes	No
Network > Digital Lines	Digital Line n "modify"	No	Yes	No
Network	Multi-Site	No	No	No
Network	Multi-Site	No	No	No
Network	Port Expanders	No	Yes	No
Network > Port Expanders	Port Expanders "add a Port Expander"	No	Yes	No
Network > Port Expanders	Port Expanders "Delete"	No	Yes	No
Network > Port Expanders	Port Expanders "Replace"	No	Yes	No
Network > Port Expanders	Port Expanders "Handsets"	No	No	No
Network > Port Expanders	Port Expanders "Outside Lines"	No	No	No
Network > Port Expanders	Port Expanders "px description" (View)	No	Yes	No
Network > Port Expanders > View	Port Expander "Modify"	No	Yes	No
Network > Port Expanders > View	Port Expander "Delete"	No	Yes	No
Network > Port Expanders > View	Port Expander "Replace"	No	Yes	No
Network > Port Expanders > View	Port Expander "Handsets"	No	No	No
Network > Port Expanders > View	Port Expander "Outside Lines"	No	No	No
Network > Port Expanders > View	Port Expander [Reboot]	No	Yes	No
Network	Static Routes	No	Yes	No
Network > Static Routes	Static Routes "Modify"	No	Yes	No
Network	VPN	No	Yes	No
Network > VPN	VPN "Modify"	No	Yes	No
Servers	DHCP	No	Yes	No

Allworx Server Page	Link	Phone	Network	Support
Servers > DHCP	DHCP Server "modify"	No	Yes	No
Servers > DHCP	Active Leases	No	Yes	No
Servers > DHCP	Known Hosts	No	Yes	No
Servers	DNS	No	Yes	No
Servers > DNS	DNS Server "flush the cache"	No	Yes	No
Servers > DNS	DNS Server "Modify"	No	Yes	No
Servers	Email	No	Yes	No
Servers > Email	Email Server "manage the email queue"	No	Yes	No
Servers > Email	Email Server "Modify"	No	Yes	No
Servers	VoIP	Yes	Yes	No
Servers > VoIP	VoIP Server "modify"	Yes	Yes	No
Servers	Web	No	Yes	No
Servers > Web	Web Server "Modify"	No	Yes	No
Reports	Auto Notification	No	No	No
Reports	Auto Notification	No	No	No
Reports	Call Details	Yes	No	Yes
Reports > Call Details	Call Details Settings "modify"	Yes	No	Yes
Reports > Call Details	Completed Call Details Report "delete"	Yes	No	Yes
Reports > Call Details	Completed Call Details Report [View Report]	Yes	No	Yes
Reports > Call Details	Completed Call Details Report [Export TSV Report]	Yes	No	Yes
Reports > Call Details	Completed Call Details Report [Export XML Report]	Yes	No	Yes
Reports	Configuration	No	No	Yes
Reports > Configuration	Configuration Report [Generate XLS Report]	No	No	Yes
Reports > Configuration	Configuration Report "View"	No	No	Yes
Report > Digital Lines	Digital Line n [Clear Report]	No	Yes	Yes
Report > Digital Lines	Digital Line n [Refresh Report]	No	Yes	Yes
Reports	Digital Lines	No	Yes	Yes
Reports	Live Calls	No	No	Yes

Allworx Server Page	Link	Phone	Network	Support
Reports	Live Calls [Refresh Now]	No	No	Yes
Reports	Network Statistics	No	Yes	Yes
Reports > Network Statistics	Collection Information [Start / Stop Collecting]	No	Yes	Yes
Reports > Network Statistics	Statistics "Total"	No	Yes	Yes
Reports > Network Statistics	Statistics "IP ADDRESS"	No	Yes	Yes
Reports	System Events	No	No	Yes
Reports > System Events	[Download]	No	No	Yes
Reports > System Events	Event Severity Filtering [Apply Filter]	No	No	Yes
Reports > System Events	Event Severity Filtering [Reset Default Filter]	No	No	Yes
Reports	Users	Yes	No	Yes
Reports > Users	"USERNAME"	Yes	No	No
Reports > Users	Delete Messages	Yes	No	No
Maintenance	Backup	Yes	Yes	Yes
Maintenance > Backup	Backup "modify"	No	No	No
Maintenance > Backup	[Backup Now]	Yes	Yes	Yes
Maintenance	Feature Keys	Yes	Yes	Yes
Maintenance > Feature Keys	Feature Keys [Install]	Yes	Yes	Yes
Maintenance > Feature Keys	Feature Keys [Submit]	Yes	Yes	Yes
Maintenance > Feature Keys	Feature Keys "Allworx Reach"	Yes	Yes	Yes
Maintenance > Feature Keys	Feature Keys "Generic SIP Handsets"	Yes	Yes	Yes
Maintenance > Feature Keys	Feature Keys "Allworx Interact Professional"	Yes	Yes	Yes
Maintenance	Import / Export	Yes	Yes	Yes
Maintenance > Import / Export	Export Configuration [Export]	Yes	Yes	Yes
Maintenance > Import / Export	Import Configuration [Choose File]	No	No	No
Maintenance > Import / Export	Import Configuration [Load]	No	No	No
Maintenance	Restart	Yes	Yes	Yes
Maintenance > Restart	[Restart Now]	Yes	Yes	Yes

Allworx Server Page	Link	Phone	Network	Support
Maintenance > Restart	[Restart Later]	Yes	Yes	Yes
Maintenance > Restart	[x] Restart Allworx Server	Yes	Yes	Yes
Maintenance > Restart	[x] Restart Allworx Phones	Yes	Yes	Yes
Maintenance	Time	Yes	Yes	Yes
Maintenance > Time	Time "Modify"	Yes	Yes	Yes
Maintenance	Tools	Yes	Yes	Yes
Maintenance > Tools	Network Diagnostics	Yes	Yes	Yes
Maintenance > Tools	Syslog - System Events	Yes	Yes	Yes
Maintenance > Tools	Allworx Technical Support Server	Yes	Yes	Yes
Maintenance > Tools	Advanced Troubleshooting	Yes	Yes	Yes
Maintenance > Tools	Network Address Translation (NAT) Information	Yes	Yes	Yes
Maintenance > Tools	Four Wire Return Loss Measurements	Yes	Yes	Yes
Maintenance > Tools	Network Statistics Logging	Yes	Yes	Yes
Maintenance > Tools	Packet Capture Tool	Yes	Yes	Yes
Maintenance > Tools	Telnet	Yes	Yes	Yes
Maintenance > Tools > Advanced Troubleshooting	Advanced Diagnostics	Yes	Yes	Yes
Maintenance	Update	No	No	No

3 Configuring a New Allworx Server

To configure a new Allworx server, log into the Allworx server's Web Admin page. After the Home page displays, click the **Install Checklist** link (on the left side) to bring up a new window that lists the steps necessary to set up a new system. Each step has a description followed by a link to the Web Admin page to execute the step. These steps are ordered to aid in a successful configuration. Most of the administrative pages for each step contain all the descriptions and help necessary to carry out the step. Use this guide to supplement the information on the web pages, when necessary.

3.1 Setting the Time

Users can set the time on the server using NTP to set the time automatically or users can adjust the time and date manually. NTP is the preferred setting, if the server has internet access.

To set the time:

1. Navigate to **Maintenance** > **Time**.
2. Click the **modify** link in the Action column. The Time page displays.
3. Click the radio button to:
   a. Use NTP to set time automatically. In the NTP server field, specify an SNTP server IP address or a domain name. In the Poll Period, specify the number of minutes between polls. OR
   b. Set time manually - specify the time in hours, minutes, seconds, and date in the respective fields.
4. Go to the Time Zone section and select the appropriate time zone from the drop-down list.
   a. Check the **Automatically adjust clock for Daylight Saving Time** box underneath the selected time zone to enable the system to update the time automatically.
   b. Click the **Get Time** button to update the clock to the current time when using an SNTP server to specify the time. Click the **Set Time** button to save changes.

3.2 Business Contact Information

This page displays the Business Contact Information (Name, Address, Phone number, etc.). Entering the Business Contact Information is optional.

To add or modify the contact information:

1. Navigate to **Business** > **Contact Information**. The Contact Information page displays.
2. Click the **Modify** link.

3. Enter Name, Street, City, State Zip, Phone, FAX, and Home Page information. If you make a mistake, click the **Start Over** button to reset the fields to the original settings.

4. Click **Update** to save changes.

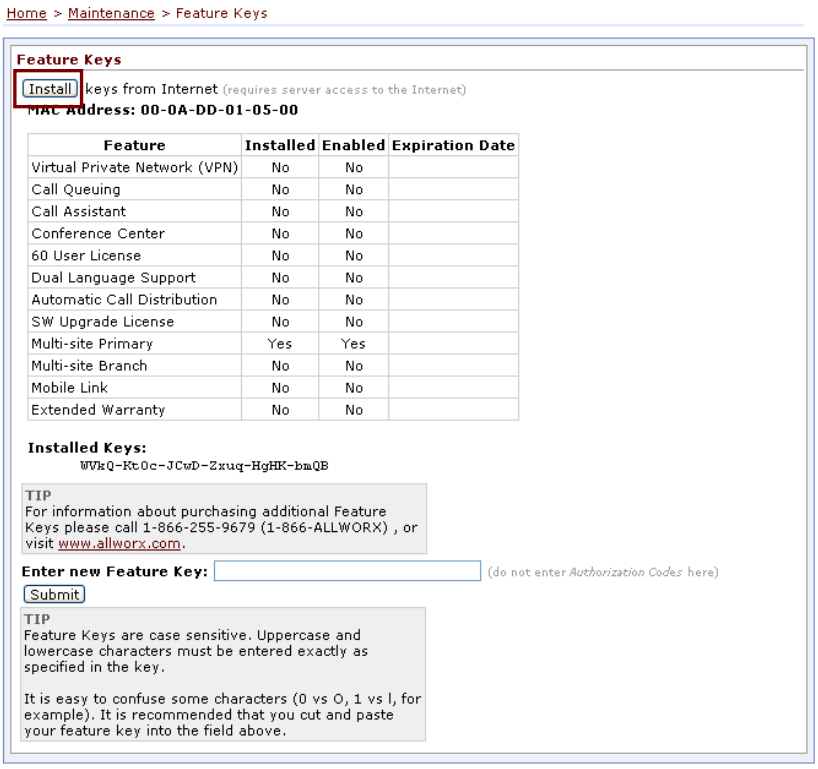
3.3 Feature Keys

Feature Keys enable access to advanced features that for purchase separately from the base feature set for Allworx servers. Newly purchased or existing keys issued for a specific Allworx server automatically download from the online Allworx key database.

To install the Feature Keys via the internet:

1. Navigate to **Maintenance** > **Feature Keys**. The Feature Keys page displays.

2. Click **Install**.


Home > Maintenance > Feature Keys
Feature Keys
Install keys from Internet (requires server access to the Internet)
MAC Address: 00-0A-DD-01-05-00
Feature | Installed | Enabled | Expiration Date
Virtual Private Network (VPN) | No | No
Call Queuing | No | No
Call Assistant | No | No
Conference Center | No | No
60 User License | No | No
Dual Language Support | No | No
Automatic Call Distribution | No | No
SW Upgrade License | No | No
Multi-site Primary | Yes | Yes
Multi-site Branch | No | No
Mobile Link | No | No
Extended Warranty | No | No
Installed Keys:
WVkQ-Kt0c-JCwD-Zxuq-HgHK-bmQB
TIP
For information about purchasing additional Feature Keys please call 1-866-255-9679 (1-866-ALLWORX) , or visit www.allworx.com.
Enter new Feature Key:
(do not enter Authorization Codes here)
Submit
TIP
Feature Keys are case sensitive. Uppercase and lowercase characters must be entered exactly as specified in the key.
It is easy to confuse some characters (0 vs O, 1 vs l, for example). It is recommended that you cut and paste your feature key into the field above.

<table>
<tr><th>Feature Key</th><th>Description</th></tr>
<tr><td>User Expansion Licenses</td><td>Expand the maximum number of users on 6x, 24x, and 48x servers. No user expansion is possible on 6x12 servers. These options do not require downloading any additional software, unless otherwise specified.
<table>
<tr><th>Key</th><th>6x</th><th>24x</th><th>48x</th></tr>
<tr><td>48 Users</td><td></td><td>X</td><td></td></tr>
<tr><td>60 Users</td><td>X</td><td></td><td></td></tr>
<tr><td>100 Users</td><td></td><td>X</td><td>X</td></tr>
<tr><td>150 Users</td><td></td><td>X</td><td>X</td></tr>
<tr><td>200 Users</td><td></td><td>X</td><td>X</td></tr>
<tr><td>250 Users</td><td></td><td>X</td><td>X</td></tr>
</table></td></tr>
<tr><td>Call Queuing</td><td>Provide the ability to direct inbound calls into queues. These calls will ring the phones of any designated users available to service the calls.</td></tr>
<tr><td>Automatic Call Distribution</td><td>Directs calls in a queue to agents using a variety of call distribution algorithms. This key also enables the method described for the Call Queuing key. If installing the Automatic Call Distribution feature key, the Call Queuing feature key is not required. This feature is not available for 6x12 servers.
Note: For details on configuring and using Call Queuing and Automatic Call Distribution see the Allworx Queuing and Automated Distribution Guide.</td></tr>
<tr><td>Call Assistant</td><td>Enable the Allworx Call Assistant and the TSP driver. The Allworx Call Assistant is a PC-based answering system, which brings the power of enterprise attendant consoles directly to small business. Use an Allworx phone with this software and additional software is required.
Note: TSP (Telephony Service Provider) is a separate PC driver that enables dialing from within contact management software, such as Microsoft Outlook</td></tr>
<tr><td>Conference Center</td><td>Provides conference bridges, a method of reserving the conference nodes for immediate or future use, and offers password-restricted access for attendees. This option does not require downloading any additional software.</td></tr>
<tr><td>Extended Warranty</td><td>Extend the expiration of the Allworx server's warranty by 60 months. Obtain this key through the Allworx Partner Portal.</td></tr>
<tr><td>Mobile Link</td><td>Enable interaction between the Allworx system and iAllworx. iAllworx is a free iPhone application that enables users to set their Presence, review their conferences and receive and send voicemails. The Mobile Link key is required to enable the IMAP protocol for the voicemail to email feature.</td></tr>
</table>

Feature Key	Description
Dual Language Support	Provide the ability to have a second language for default audio prompts. Language Packs containing the audio prompts in languages other than US English are available for download from the Allworx Partner Portal at www.allworxportal.com.
Multi-Site Primary	Provide the ability to integrate multiple sites seamlessly. The Primary key designates the Controller site for the network. At least one site in the network must have a Multi-site Primary key. More than one site can have a primary key. It also enables a larger number of BLF/DSS between sites (up to 255) than the Multi-site Branch key (up to 10). This feature is not available for 6x12 servers.
Multi-Site Branch	Provide the ability to integrate seamlessly multiple sites. The Branch key enables sites to join a network of sites but not configured as the controller site. Sites without a Multi-site Primary key are limited to DSS/BLF for a maximum of 10 handsets from other sites.
Software Upgrade	Enable system software updates. Without this key, only patch updates to the currently loaded release are available.
Virtual Private Network (VPN)	Enables access to remote and secure data. This key is not required for opening a single-user remote diagnostic VPN. This option does not require downloading any additional software. This feature is not available for 6x12 servers.
T1/PRI License #1 (48x only)	Activates the T1-A port on an Allworx 48x system.
T1/PRI License #2 (48x only)	Activates the T1-B port on an Allworx 48x system. This does not include the license for the first T1. You must install T1 license #1 in order to activate the T1 #2. Note: Feature Keys activate features only on the Allworx server for which they are generated. Therefore, Feature Keys generated for one system cannot be used on any other system.
Reach	Order Feature key licenses in increments of 1, 5, and 10, and the feature counts are additive. Installing multiple keys for the same or different feature count adds licenses to the server. Once Reach licenses are active on a server, the Allworx Server Administrator can configure users to claim licenses on a first come, first server basis. Each server enables use of a single instance of Reach license is active on a server, a user can reserve a license or use an instance of that license on a first come, first serve basis via administration programming. Each installation of system release 7.5 enables configuration of a single instance of the Reach application without the purchase of a feature key.
Generic SIP Handsets	Enables newly created Generic SIP handsets on the system. Each Allworx server enables configuration of either 2 or 5 generic handsets (3 on the 6x12 and 6x; 5 on the 24x/48x) without the purchase of a feature key. Generic SIP handsets that exist in the system prior to the 7.5 upgrade will continue to operate without the purchase of a feature key package.

4 Upgrading Server Software

Before performing an upgrade, be aware that:

- If you are updating from Release 7.0 or lower, Allworx has made significant changes to multi-site networking that require additional feature keys and configuration steps in order for site-to-site features to continue to operate. Multi-site networks will cease functioning until completing the server updates, procuring and installing the new keys, and doing additional configurations on each site. Find details of Release 7.5 Advanced Multi-site in the Allworx Advanced Multi-site Setup Guide that is available for download on the Allworx portal.
- Downgrading from one release to an earlier release will result in undesirable behavior and is not supported.
- It is highly recommended that you perform an OfficeSafe backup prior to performing the upgrade (See Chapter 16, Backing up and Restoring Data).
- The upgrade requires a reboot of the server. Since this causes disconnections and disruption of data, the system should be idle (no phone or data users) when the upgrade is done.
- After installing, close all browser windows and open a new browser window before proceeding. If there is a browser session open during the upgrade, the Admin page may not display properly.

For upgrades to the software on the server, navigate to the **Maintenance** > **Update** Admin page. Supported web browsers for Allworx server administration include:

- IE 8, 9
- Google Chrome (Latest Release)
- Modzilla Firefox (Latest Release)

4.1 Upgrading from Prior Releases

Note: Upgrading from prior releases of the Allworx System Software to Release 7.5 requires installing a Software Upgrade Feature Key or that the server is in its initial software warranty period (90 days).

Note: You should not skip Releases to install Release 7.5. If you are upgrading from Release 7.3 or lower, upgrade to the next release in sequence until the server is running Release 7.4. Then you can install Release 7.5. .

For upgrades to Release 7.5, navigate to the **Maintenance** > **Update** page. Click one of two options: (1) Download update from web and (2) Upload update from PC.

Option 1: Download update from web

When 'Download update from web' is chosen, the server will determine if new software releases are available. If a new upgrade is available, the option to install them is available.

1. Choose the desired software version.

2. Click **Download Update**.

Option 2: Upload update from PC

1. Download the update files to a PC from the Allworx portal (www.allworxportal.com), and then upload to an Allworx server.

2. Click the **Browse** button to navigate to the location of the downloaded Allworx server software file from the Allworx portal.

3. Select the file, and click **Open**. The Update page displays.

   Click the **Load** button. The page displays the current version of software and the software version of the file that was loaded on the system. A warning message displays for any inconstancies such as:

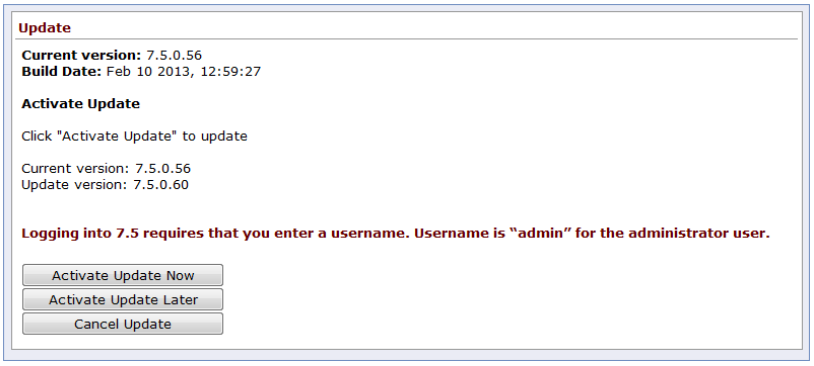
   a. Update version is the same or lower than the currently running version.

   b. Update is intended for a different Allworx server model.

4.2 Activating Server Software

After loading the software onto the Allworx server, the System Administrator can determine when the update should begin by selecting one of the following buttons:

- Activate Update Now - update begins immediately
- Active Update Later - update begins at another time
- Cancel Update - ends the update and returns to the main update screen

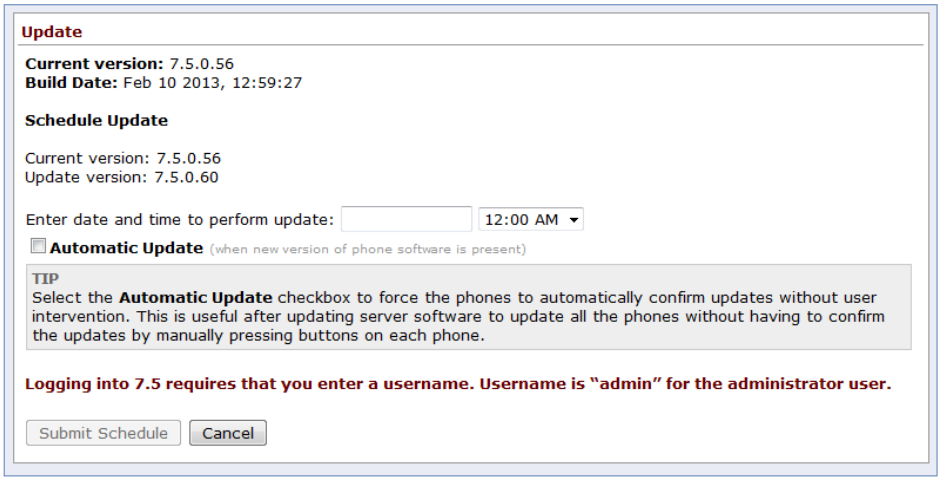

Update
Current version: 7.5.0.56
Build Date: Feb 10 2013, 12:59:27
Activate Update
Click "Activate Update" to update
Current version: 7.5.0.56
Update version: 7.5.0.60
Logging into 7.5 requires that you enter a username. Username is "admin" for the administrator user.
Activate Update Now
Activate Update Later
Cancel Update

To begin the activation immediately, select the **Activate Update Now** button. The Server Software update begins.

NOTE: After installing, close all browser windows and open a new browser window before proceeding. If there is a browser session open during the upgrade, the Admin page may not display properly.

To schedule an update for a later time (up to a week ahead):

1. Click **Activate Update Later**.
2. Check the **Automatic Update** box to update the firmware on Allworx Phones automatically.
3. Select the date and time to initiate the update, and then select the **Submit Schedule** button. The Update page displays with the date and time schedule for the server software update.


Update
Current version: 7.5.0.56
Build Date: Feb 10 2013, 12:59:27
Schedule Update
Current version: 7.5.0.56
Update version: 7.5.0.60
Enter date and time to perform update:
12:00 AM
Automatic Update (when new version of phone software is present)
TIP
Select the Automatic Update checkbox to force the phones to automatically confirm updates without user intervention. This is useful after updating server software to update all the phones without having to confirm the updates by manually pressing buttons on each phone.
Logging into 7.5 requires that you enter a username. Username is "admin" for the administrator user.
Submit Schedule
Cancel

To cancel the scheduled update, select the **Cancel Update** button. The previous Select Update Option page displays.

5 Network Configuration

5.1 General Network Configuration Requirements

If connecting remote phones or remote Px Expanders to the system, observe the following very important security requirements:

5.1.1 Server

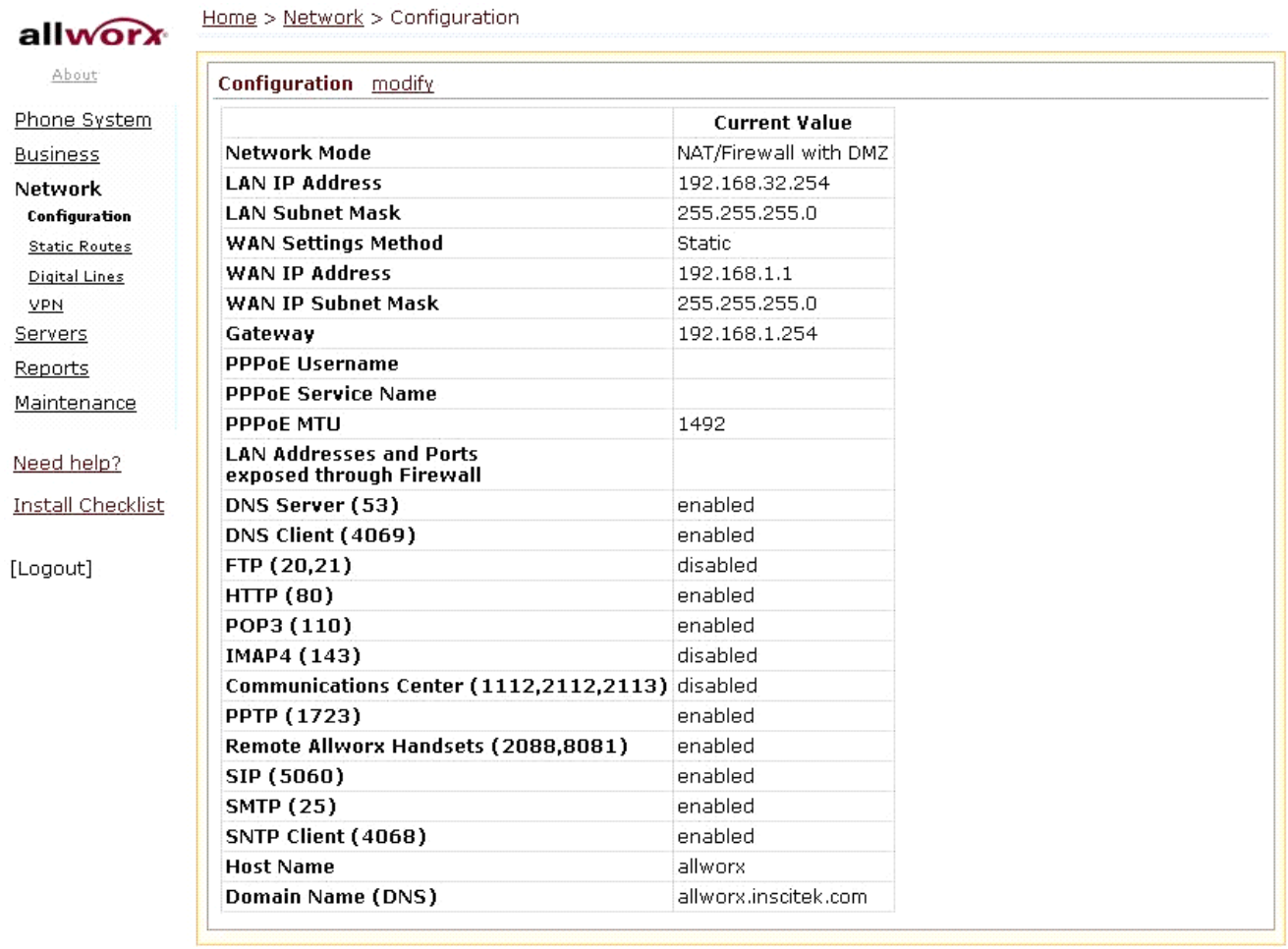
- The Allworx Server Administrator can directly connect the Allworx server to the Internet via its WAN port. However, the WAN cannot be in Use PPPoE mode.
- Install the server behind a firewall or connect it to the public internet using the WAN port. **DO NOT** connect the Allworx LAN port directly onto the public Internet.
- Disable Allworx WAN services (ports) not in use.
- Change voicemail ports (SMTP and IMAP) to non-standard port numbers.
- Change all server admin, phone admin, and user passwords from the default values.
- Update every server to the most recent patch level of either the 7.3 or 7.4 software release to ensure that the server has the most recent security changes.
- Use strong passwords for server and phone administration pages. **DO NOT** use simple passwords such as "1234" or "Allworx".
- Verify that there is no exposure of the Admin Page (Port 8080) to the Public network. **DO NOT** port forward directly to the LAN port of an Allworx server from the customer's router. For remote maintenance, use the Allworx VPN. Navigate to **Home** > **Network** > **VPN** > **modify** to configure the VPN settings.

When configuring WAN interface to connect to the public internet:

- Enable the server in NAT Firewall mode, preferably with Stealth DMZ. In stealth mode, the WAN interface does not respond to "pings" from other devices.

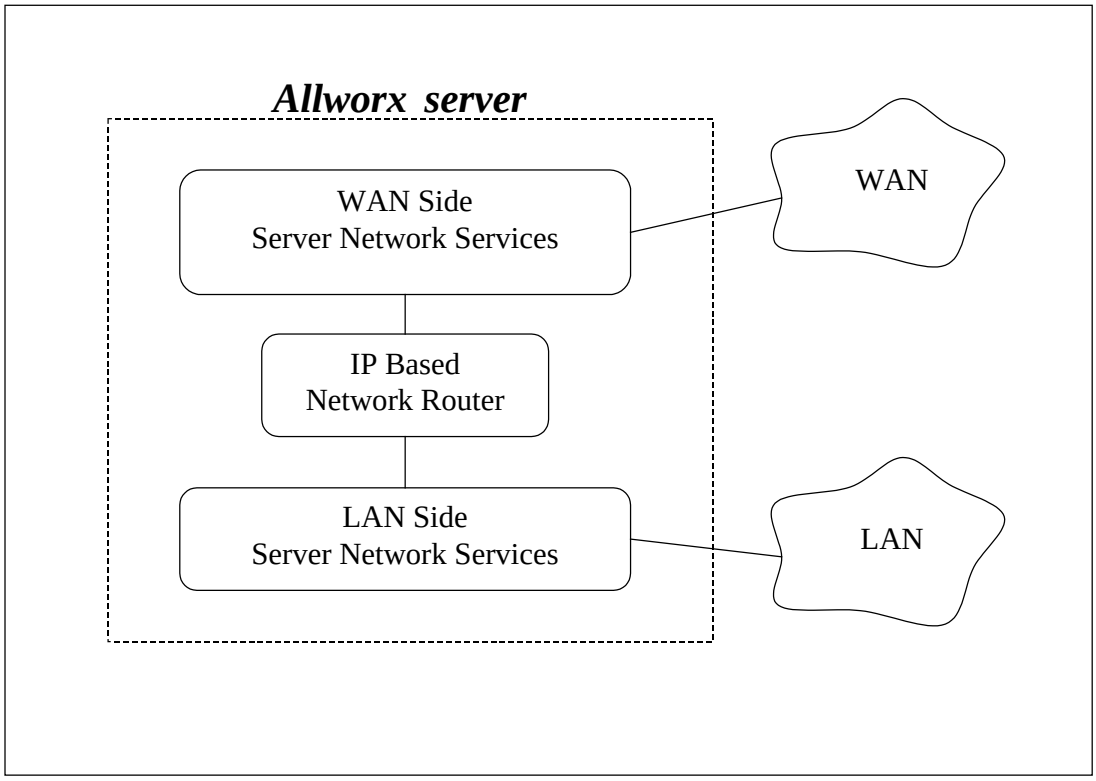
Note:Allworx cannot guarantee proper operation of 3rd-party networking products. However, Allworx expects this to work with typical firewalls and tests against several brands. Some NAT/Firewall configuration may be required. Refer to Allworx Server behind a 3rd-Party NAT Firewall on page 33 for more information.

The Allworx server provides powerful and flexible network infrastructure capability by setting the Network Mode parameter on the **Network** > **Configuration** page. This page shows the different parameter sets depending on the Network Mode setting. If the Network Mode is set to the factory default value of NAT/Firewall with DMZ, the page will be similar to the one shown below.


allworx
About
Phone System
Business
Network
Configuration
Static Routes
Digital Lines
VPN
Servers
Reports
Maintenance
Need help?
Install Checklist
[Logout]
Home > Network > Configuration
Configuration modify
Current Value
Network Mode NAT/Firewall with DMZ
LAN IP Address 192.168.32.254
LAN Subnet Mask 255.255.255.0
WAN Settings Method Static
WAN IP Address 192.168.1.1
WAN IP Subnet Mask 255.255.255.0
Gateway 192.168.1.254
PPPoE Username
PPPoE Service Name
PPPoE MTU 1492
LAN Addresses and Ports exposed through Firewall
DNS Server (53) enabled
DNS Client (4069) enabled
FTP (20,21) disabled
HTTP (80) enabled
POP3 (110) enabled
IMAP4 (143) disabled
Communications Center (1112,2112,2113) disabled
PPTP (1723) enabled
Remote Allworx Handsets (2088,8081) enabled
SIP (5060) enabled
SMTP (25) enabled
SNTP Client (4068) enabled
Host Name allworx
Domain Name (DNS) allworx.inscitek.com

5.2 Network Mode: Standard Router

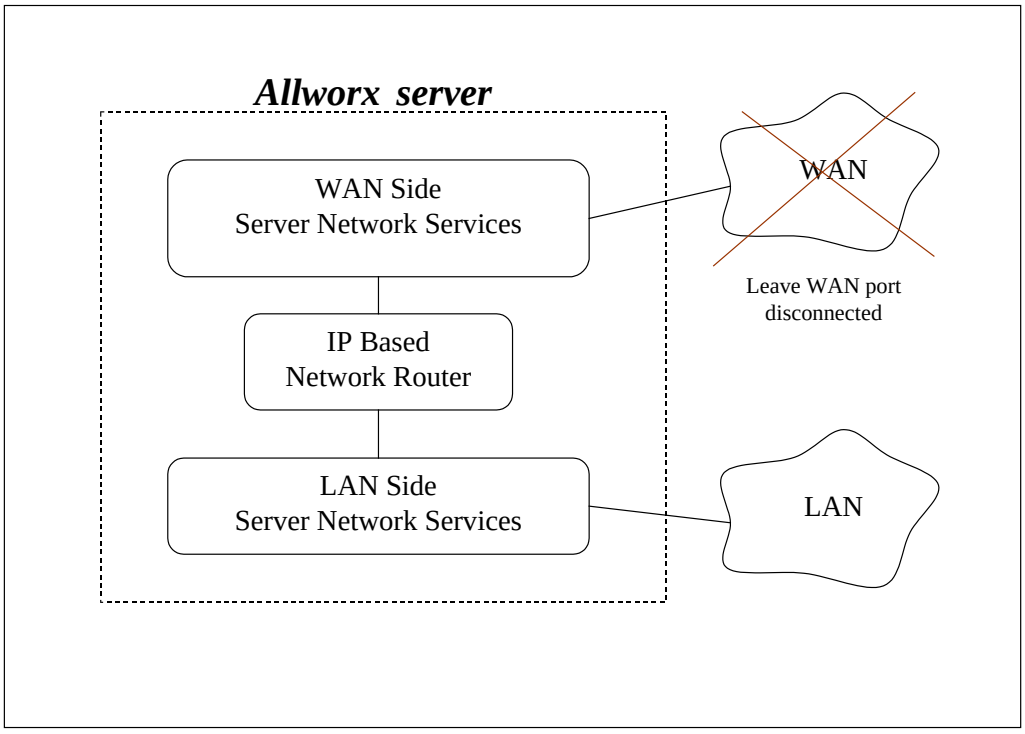
When the network mode is set to Standard Router, the logical network capability is as shown in the diagram below:



The server acts like an ordinary two port router with the server routing packets between the LAN and WAN interfaces. No NAT or firewall functionality is enabled. All LAN hosts are visible on the WAN. If the DHCP server is enabled (see the **Servers** > **DHCP Server** page), then the DHCP server will send its LAN IP address as the DHCP router (gateway) option so that LAN clients will know to use the Allworx server as the router to the WAN. WAN hosts wanting to connect to LAN hosts will need to be configured with a network route using the Allworx server's WAN address as a gateway to the LAN.

5.3 Network Mode: LAN Host

When the network mode is set to LAN Host, the logical network capability is as shown in the diagram below:



Use this mode when deploying the Allworx server as a peer (instead of as a router or firewall) on the local area network.

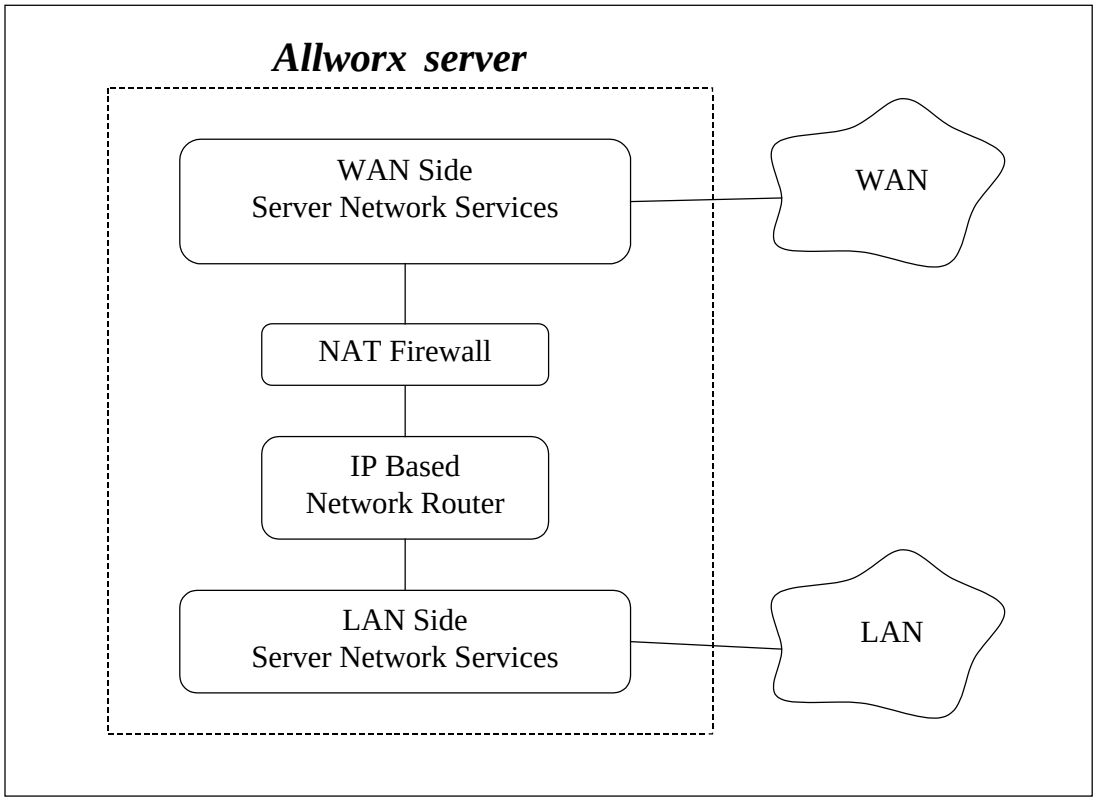
This mode is the same as Standard Router except that when the DHCP server is enabled, it will pass out the configured Gateway address (set on the **Network** > **Configuration** > **Modify** page) as the DHCP router (gateway) option instead of giving out the Allworx server's LAN address.

When in this mode, Allworx recommends not connecting the WAN network port (i.e. not plugging in the network cable). Even though there is no network connection, assign a WAN IP address and subnet mask. Use a subnet number that is distinct from the LAN subnet number when assigning the WAN IP address. Use a completely unused subnet number to avoid any routing conflicts.

The WAN services (like FTP and HTTP) are still available via the LAN if the proper routes are configured on your network.

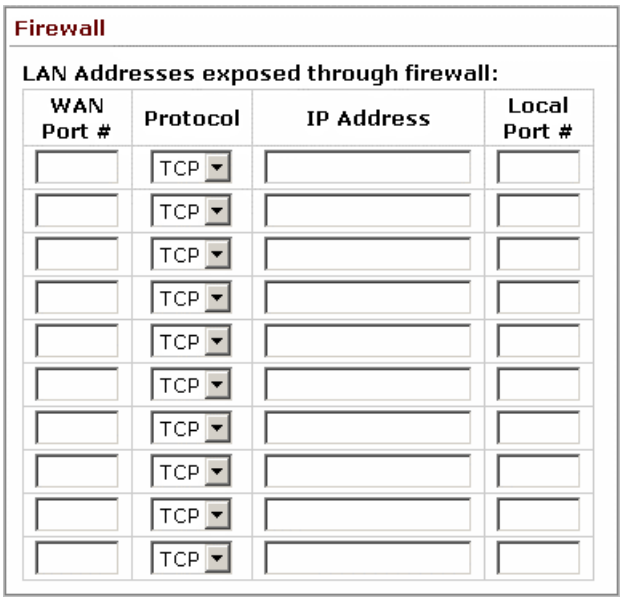
5.4 Network Mode: NAT/Firewall

When the network mode is set to NAT/Firewall, the logical network capability is as shown in the diagram below:



For security purposes, this mode's default settings permit only outbound connections (from the LAN to the WAN); all WAN-initiated connections are denied. In addition, all packets are subject to network address translation (NAT). Because of this, the addresses of devices on the LAN are not visible on the WAN, yet they have access to the WAN for outbound traffic. These features reduce the ability of WAN hosts to attack LAN hosts.

Expose the specific LAN sports to enable WAN access to specific LAN network services through the firewall. To configure, go to **Network** > **Configuration** > **Modify** and go to the Firewall section.



For example, if a PC on the LAN is hosting a website that must be accessible from the Internet, its http port (port 80) must be exposed through the firewall. To permit access to this web server, create a new entry, entering 80 for the WAN Port #. Choose TCP for the Protocol, enter the PC's IP Address (e.g. 192.168.101.9) and the Local Port # of 80.

Note: The WAN and LAN Port #s must always be the same.

If port 80 of a PC on the LAN is exposed this way, the Allworx port 80 http service must be disabled. Uncheck the **HTTP (80)** checkbox in the Allworx Services section of the page. If the Allworx Internet web page is to be used, leave the Allworx **HTTP** box checked and change the http port on the PC to some other port number (e.g. port 5000).

If port 80 of a PC on the LAN is exposed this way, disable the Allworx port 80 http service. Uncheck the **HTTP (80)** checkbox in the Allworx Services section of the page.

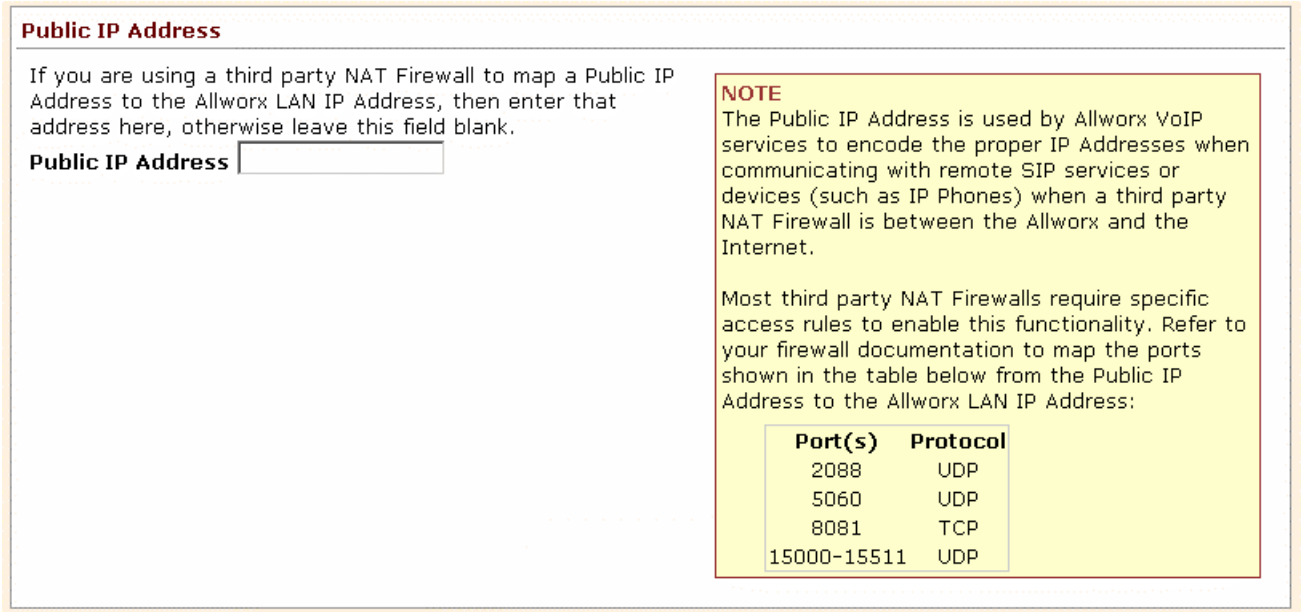
If using the Allworx Internet web page, leave the **Allworx HTTP** box checked and change the http port on the PC to some other port number (e.g. port 5000).

Due to security requirements, do not use the Allworx server's LAN IP address as an IP Address, in the table above. To access the Allworx LAN interface from the Internet, use the server's VPN feature.

5.5 Allworx Server behind a 3rd-Party NAT Firewall

To support remote devices, Allworx Reach Mobile Clients, and SIP Proxy usage when the Allworx server is behind a single 3rd-party NAT firewall, the server's Network Mode must be in LAN Host Mode.

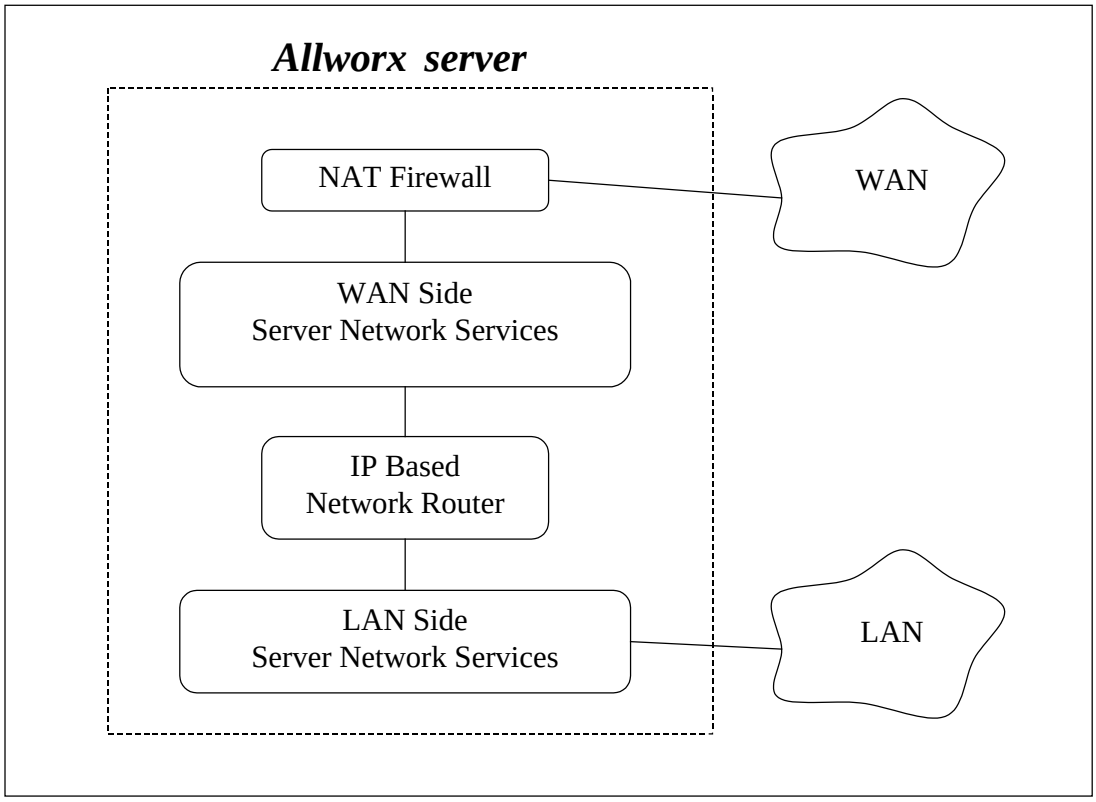
When set to LAN Host Mode, the page contains a Public IP Address section as shown below:


Public IP Address
If you are using a third party NAT Firewall to map a Public IP Address to the Allworx LAN IP Address, then enter that address here, otherwise leave this field blank.
Public IP Address
NOTE
The Public IP Address is used by Allworx VoIP services to encode the proper IP Addresses when communicating with remote SIP services or devices (such as IP Phones) when a third party NAT Firewall is between the Allworx and the Internet.
Most third party NAT Firewalls require specific access rules to enable this functionality. Refer to your firewall documentation to map the ports shown in the table below from the Public IP Address to the Allworx LAN IP Address:
Port(s) Protocol
2088 UDP
5060 UDP
8081 TCP
15000-15511 UDP

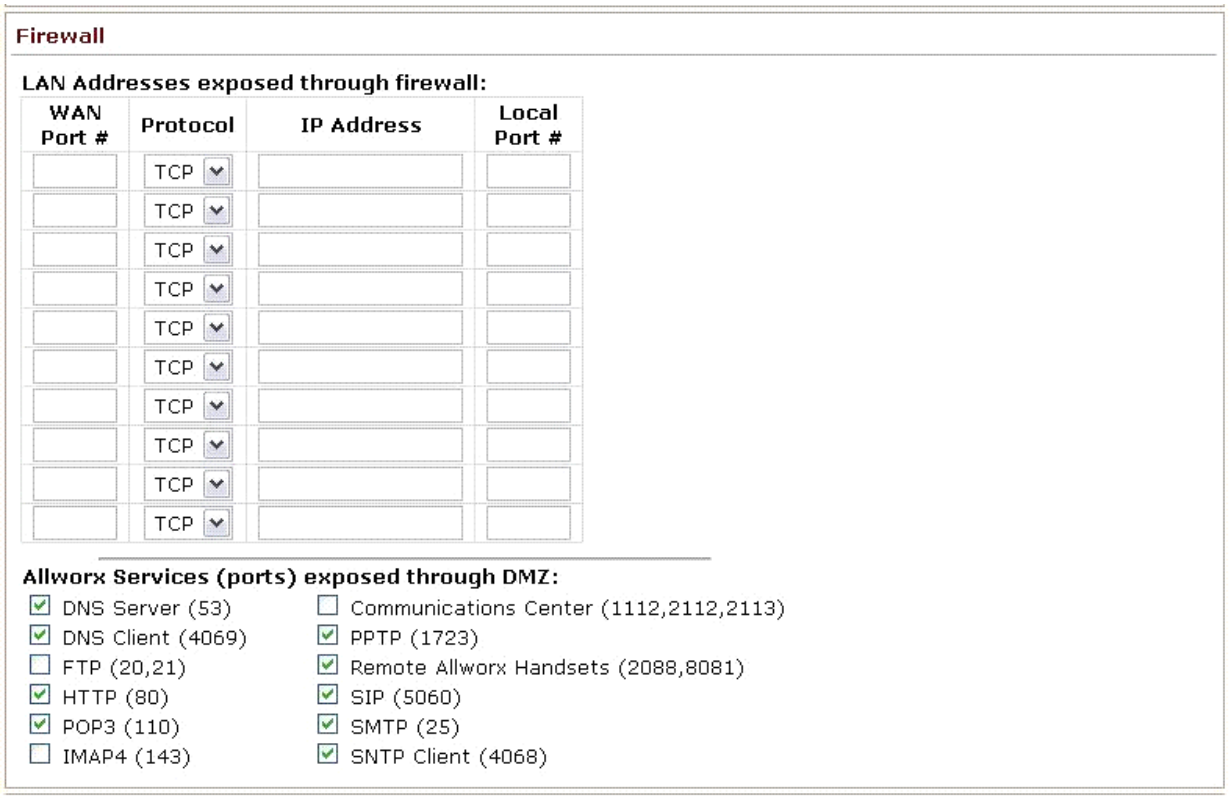
As instructed on the page, enter the firewall's public IP address in the Public IP Address field. In addition, it may be necessary to configure the firewall to statically map specific ports. This is described in the NOTE box on the web page and is discussed further in the document.

5.6 Network Mode: NAT/Firewall with DMZ

When the network mode is set to NAT/Firewall with DMZ, the logical network capability is as shown in the diagram below:



Turning on the DMZ moves the WAN network services behind the firewall. This means that even the Allworx WAN services (POP, SMTP, FTP, HTTP, etc.) are not available by hosts on the WAN. To make some of these services available, navigate to **Network** > **Configuration** > **Modify** and edit the Firewall section of the page.



Note: The checkboxes are for configuring specific Allworx services in the LAN address list. They are provided as a convenience as compared to filling in the list.

5.7 Network Mode: NAT/Firewall with Stealth DMZ

This mode is the same as NAT/Firewall with DMZ except that all ICMP services (echo, redirect, etc) are turned off. This makes it more difficult for attacks from the WAN to probe the server. It also makes it more difficult for the administrator to troubleshoot any network connectivity problems (since ping and traceroute won't work).

Example 1: Secure Firewall

Requirements	Use the Allworx server as the router between a LAN and the Internet. Protecting the LAN from the Internet is a requirement. Use the server as the local email server with email being sent to it from the WAN and LAN. The server will be the LAN timeserver. All other WAN services will be denied.
Configuration	Set the Network Mode to NAT/Firewall with Stealth DMZ. Setting it to stealth mode will reduce the ability of Internet attacks to recognize the existence of the Allworx server and its offered services. Go to Network > Configuration > Modify and edit in the Firewall section of the page, change the Allworx Services (ports) exposed through DMZ so that only SMTP, DNS, and SNTP are checked. SMTP is required to receive email from the Internet for local users. DNS is required so the email server can resolve outbound mail addresses. SNTP is required to get accurate time from an Internet time server (configured on the Maintenance > Time page).

Example 2: Secure Firewall with 3rd-Party Email Server

Requirements	The requirements are identical to Example 1 except that instead of using the Allworx server as the email server, another host (at 192.168.101.12) on the LAN will be used as the email server.
Configuration	The configuration is identical to the previous example except for the following changes: Uncheck the SMTP service from the list of exposed Allworx services. Go to Network > Configuration > Modify and edit in the Firewall section of the page, add an entry to LAN Addresses exposed through firewall where: WAN Port # is 25. Protocol is TCP. IP Address is set to the LAN email server, 192.168.101.12 Local Port # is 25.

6 VPN

This page displays the system's Virtual Private Network settings.

NOTE: It is necessary to restart the Allworx server for the new Network VPN settings to take effect.

To enable the VPN PPTP server:

1. Navigate to **Network** > **VPN**. The VPN page displays.
2. Click the **Modify** link to update the values.
3. Check the **Enable VPN PPTP Server** box and update the fields.
4. Enter the required information in the respective fields. If you make a mistake, click the **Start Over** button to reset the fields to the original settings.
5. Click **Update** to save changes.
6. Reboot the Allworx server.

To enabling VPN for Individual Users:

1. Go to **Business** > **Users**. The Users page displays.
2. Locate the username in the Users table, and click the **Modify** link. The Modify dialog box displays.
3. Locate the VPN Settings section, and check the **Allow VPN Access** box.
4. Enter a VPN password in the field, and then Confirm VPN Password in the next field.
5. Click **Update** to save the changes.

7 Internal Dial Plan and Extension Length

The extension length setting configures extensions to be either three (3) digits or four (4) digits long. This capability influences other server features and has some limitations that are discussed below.

The Internal Dial Plan specifies the first digit for user extensions and other PBX functions such as forwarding calls and accessing outside lines. The dial plan can be configured to meet the needs of the customer by:

- Matching extensions to DID numbers
- Keeping extensions the same as they were prior to the introduction of the Allworx system
- Changing the PBX outside line access to a digit other than "9" to avoid accidental 911 calls
- Both extension length and the internal dial plan affect many of the system's features. For this reason, it is recommended to make these decisions and configure the options early in the installation process.

7.1 3-Digit vs. 4-Digit Extensions

7.1.1 Setting Extension Length

New Allworx servers are factory-configured for 3-digit extensions. If using 3-digit extensions there are no configuration changes. If using 4-digit extensions, Allworx recommends changing the extension length to four digits before defining any Users, Handsets, or Extensions. Change the extension length using the following procedure:

1. Login the server.
2. Navigate to **Phone System** > **Dial Plan**.
3. Locate the Internal Extension Length section, and click the **Modify** link.
4. Change the User and System Extensions to 4 digits in length.
5. Click **Update** to save the configuration.
6. Reboot any previously configured handsets.

Note: Extension Length cannot be changed on a system that is part of a Multi-site network.

7.1.2 Extension Length Changes on Existing Systems

When an existing server with 3-digit extensions is switched to 4-digit extensions, the user and system extensions will automatically change to four digits. The server will add a one (1) to the start of each extension. For example, if a user had the extension x104,

the extension automatically changes to x1104. A system extension of x231 adjusts to x1231.

Switching back from 4-digit extensions to 3-digit extensions is not recommended. If the switch is made, all extensions will be shortened to three digits by removing the first digit (e.g. an extension of x1205 will become x205). However, this can lead to conflicts (e.g. x1100 and x2100 would shorten to the same 3-digit extension). For this reason, switching from 4-digit extensions to 3-digit extensions will be prevented if there are any extensions outside the range of x1100-x1299. For sites using a non-default internal dial plan, all extensions must be in the range of x100 – x299. For example, if the site's extensions are 4xxx – 5xxx, all extensions must be in the range of 4100-4299, in order to switch to 3-digit extensions. If there are extensions outside of this range but a switch from 4-digit extensions to 3-digit extensions is desired, all extensions that are outside the range must be changed or deleted.

The following affects phone functions when the extension length setting is changed. The format of the number to dial is the same but the number of digits changes, depending on whether extensions are set to three digits or four digits.

Function	Format†	3-digit Example†	4-digit Example[1]
Leave a voicemail	3 + extension	3199	31199
Check voicemail	6 + extension	6199	61199
Call forwarding	45 + extension	45199	451199
Answer alternate extension	7 + extension	7199	71199

In addition to the changes in user and system extensions, the following server configurations automatically update when changing the extensions from three digits to four digits:

- Extension call routes including Internal Caller-ID checking
- Incoming outside line call routes
- DID mappings
- System Speed Dials (the Speed Dial extension doesn't change but the extension that is dialed as a result changes)
- Speed Dial PFK (differs from Personal Speed Dial PFK)

[1] Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

- Default Extensions, extensions accessed by Shortcuts, and "Dial By Directory" listings of Auto Attendants
- Call Detail Records (prior records are unaffected by the change)
- Off hook digits dialed for handsets

7.1.3 Functions Not Changed

The following are not affected:†

- Personal Speed Dials (these are stored on the phones so they must be modified by the users)
- System Speed Dial extensions (350-399, 34000-34999)
- Call Park extension and Parking Orbits (700-709)
- Auto-Attendant extensions (400, 431-439)
- Door Relay (403)
- Message Center (404)
- Conference Center (408)
- Paging extensions (460-469)
- Queue extensions (4400-4409, 4410-4419)
- Modifying Internal Dial Plan

There are two configuration modes for the Internal Dial Plan:

- **Normal Mode** – User and system extensions are in a continuous range of 200 (3-digit extensions) or 2000 (4-digit extensions) numbers. The numeric range can be anywhere between 1xx and 9xx. Examples are 3-digit extensions between 100 and 299 or between 700 and 899. System functions (e.g. Speed Dials and retrieving parked calls) are in other ranges that are not assigned to user extensions.
- **Extension Mode** – User and system extensions can be in virtually any numeric range. Only the operator digit (e.g. zero '0') and the PBX external dial digit (e.g. nine '9') are reserved. System functions begin with an asterisk (*). For example, extensions can be anywhere between 100 and 899 or 1000 and 8999.

The **Phone System** > **Dial Plan** > **Internal Dial Plan** > **modify** page includes a table that depicts the Internal Dial Plan. Change the dial plan by clicking the Modify link. Normal Mode is the default.

† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

Note: The Internal Dial Plan cannot be changed between Normal Mode and Extension Mode on a system that is part of a Multi-site network.

In either mode, the selections are made by choosing the leading digit for groups of dialing patterns from a pull-down list. Selecting a digit for one pattern affects the digits that are available for use with other patterns. As selections are made, the lists for other dial patterns are automatically adjusted to include only valid remaining digits. For this reason, Allworx recommends making selections starting at the top of the page.

☐ **Use Extension Mode**

	Plan	
1,2	1xxx 2xxx	User and System Extensions
0	0	Operator
9	9 + external number	External Call access (follows External Dialing Rules below)
8	8 + enterprise number	Enterprise calling
5	5nnn	Internal station access (reserved for system)
3	350-399 34nnn	Speed dial numbers
6	6 + user extension	Message Center
7	700 call park 701-709 call retrieve 7xxxx call pickup 78 + pin code	Call Functions (park/pickup/audit pin code)
3	3 + user extension	Leave a voicemail for extension
4	*03 door relay *08 conference center *2n do not disturb *3n auto attendants *4nn call queues *5xxxx call forwarding *6n paging	PBX Functions

Check the **Use Extension Mode** box to switch to Extension Mode.

☑ Use Extension Mode

	Plan	
9	9 + external number	External Call access (follows External Dialing Rules below)
0	0	Operator
	1xxx 2xxx 3xxx 4xxx 5xxx 6xxx 7xxx 8xxx	User and System Extensions
	*8 + enterprise number	Enterprise calling
	*5nnn	Internal station access (reserved for system)
	*250-*299 *24nnn	Speed dial numbers
	*6 + user extension	Message Center
	*700 call park *701-*709 call retrieve *7xxxx call pickup *79 + pin code	Call Functions (park/pickup/audit pin code)
	*3 + user extension	Leave a voicemail for extension
	*403 door relay *408 conference center *42n do not disturb *43n auto attendants *44nn call queues *45xxxx call forwarding *46n paging	PBX Functions

Internal Dial Plan changes cannot be made to servers that are in a Multi-site network.

To disable Multi-site on all servers:

1. Navigate to **Network** > **Multi-Site** > **modify**.
2. Go to the Configuration section, and click the **Disabled** button.
3. Click the **Remove links on all servers** to remove all site data on all servers.
4. Navigate to the **Phone System** > **Dial Plan** > **Internal Dial Plan** section, and click the **modify** link.
5. Confirm that the Internal Dial Plan is identical on all servers - Normal or Extension Mode.

6. Reboot all phones, and enable Multi-site on the Primary site.

   a. Navigate to **Network** > **Multi-Site** > **modify**.

   b. Go to the Configuration section, and click the **Controller Site** button.

7. Enable Multi-site on all of the Branch sites and Accept all sites into the network on the Primary site.

   a. Navigate to **Network** > **Multi-Site** > **modify**.

   b. Go to the Configuration section and click the **Branch Site** button.

8. Verify that the multi-site network is operating properly. Run the Multi-site Tests on the **Network** > **Multi-Site** page and place calls between all combinations of servers.

7.2 Important Notes

Note: If installing Generic SIP phones on the system, Internal Dial Plan changes **can modif**y the configuration on the server such that the Generic SIP phones no longer register.

To examine the configuration:

1. Navigate to **Phone System** > **Handsets**.

2. Examine the User IDs for the installed Generic SIP phones.

3. Determine if the registration configuration for each Generic SIP phone is the same or different from the current User ID on the server Handsets page. If there is a difference, modify the on-phone configuration to match the new User ID.

Note: Allworx user guides frequently refer to dialing patterns based on the factory default Internal Dial Plan. After making changes to the dial plan, My Allworx Manager's Phone Functions tab automatically updates with the new digits. Print and distribute this sheet to all end users. Users can view the Phone Functions Reference Card by navigating to **Phone System** > **Dial Plan** and view the Phone Functions Reference Card.

Note: Changing the Operator to something other than "0" will not automatically change the Operator digit shortcut in the Auto Attendants. If the Operator digit is changed, manually update the Auto Attendants shortcuts. To update manually, see Chapter 26, Auto Attendants.

7.3 Multi-site Calling

For reliable calling between sites in a multi-site network, all Allworx servers must have the same software release, extension length, and internal dial plan.

8 User Passwords

The system maintains a PIN for accessing phone functions (accessing the Message Center, logging in to Queues, etc.) and a password for accessing My Allworx Manager and the Allworx Administration pages. Allworx Server Administrators can enforce more stringent password requirements for all user accounts, and/or require users to change their password on the next login. Users can change their password and PIN using My Allworx Manager.

Allworx server features that require authenticated user access using a password.

- Reach
- Interact
- Call Assistant
- My Allworx Manager

Allworx server features that require authenticated user access using a handset keypad use the new PIN:

- Message Center (Audio and Visual)
- Hot Desk Login
- ACD Agent Login

8.1 Requirements

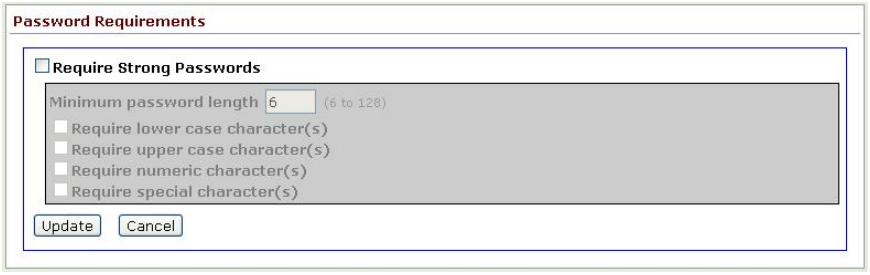
The Maximum Length of Passwords is 128 characters. The server enables using special characters in Passwords as shown in the table below:

[SP]	!	“	#	$	%	&	‘	(	)	|
*	+	,	-	.	/	:	;	<	=	}
>	?	@	[	\	]	^	_	`	{	~

To change the password requirements:

1. Navigate to **Business** > **Users** > **Password Requirements**. The section displays the current requirements for Passwords.

2. Click the **modify** link to change the settings. The default setting for Require Strong Passwords is not required.



   a. If the Allworx Server Administrator leaves the **Require Strong Passwords** box unchecked (default setting), the server enforces the following requirements for user passwords:

      - Can only contain letters (A-Z, a-z), digits (0-9), and special characters (see above).
      - Minimum length of 4 characters
      - Maximum length of 128 characters

   b. If the Allworx Server Administrator checks **Require Strong Passwords** box, the server enables the Allworx Server Administrator to modify the requirements for the passwords. Selectable requirements for passwords include:

      - Require lower case character(s)
      - Require upper case character(s)
      - Require numeric character(s)
      - Require special character(s)

      If a user's password does not already meet all the updated requirements, the server requires them to change the password at their next login.

8.2 Users

This Admin page enables the Allworx Server Administrator to set each user's passwords.

8.2.1 New Users

1. Navigate to **Business** > **Users**, and go to the Users section.
2. Click the **add new user** link. The Add New User page displays.
3. Enter the user information:
   - Login Name – must start with a letter; use only letters, digits, and underscores.
   - Full Name fields – First, Middle, Last (required). The system requires the user's Last name at a minimum.
   - Password – the password must comply with the password requirements.
   - PIN – default PIN is 1234. If user is already set up prior to upgrading the server to 7.5, the default PIN is the same from prior to the upgrade.
4. Locate the **Require Password Change** and **Require PIN Change** checkboxes. The server default (checked) requires the user to update each password and PIN at the next login. If the Allworx Server Administrator unchecks the box, the user does not need to update the password.
5. Click the **Add** button to save changes.

8.2.2 Modifying Users

1. Navigate to **Business** > **Users**, and go to the Users section.
2. Click the **modify** link. The Modify page displays.
3. Edit the user information:
   - Full Name – First, Middle, Last
   - Password/Confirm Password – the password must comply with the password requirements, (optional).
   - PIN/Confirm PIN – default keypad password is 1234, (optional).
4. Locate the **Require Password Change** and **Require PIN Change** checkboxes. The server default (checked) requires the user to update each password at next login. If the Allworx Server Administrator unchecks the box, the user does not need to update the password at the next login.
5. Click the **Update** button to save changes.

9 Adding Users

9.1 User Templates

User Templates contain a set of common configuration settings and can be applied when creating or modifying users. Not all user settings are included in the templates. Some settings must be configured for each user from their user modify page.

Available User Templates are displayed in a table on the **Business** > **Users** page, with options to View or Copy the System User (Default) template or View, Copy, or Delete other template groups. The System User (Default) template contains the user factory default settings. When Allworx servers are upgraded to Release 7.0 or higher the System User template is assigned as the base template for all users. None of the settings change for existing users in this process. When adding new users, the System Administrator may apply the System User template or create a custom template for a desired combination of settings.

9.1.1 Adding User Templates

Prior to adding users on a new system, determine the required feature options for which users (e.g. Off-site Access to Outside Lines or the ability to create conferences).

For a list of users for each template, select the View link for the appropriate template, and navigate to the Template Last Applied To Users section for the complete list.

To create a new user template:

1. Navigate to **Business** > **Users**, and go to the User Templates section.

2. Select the System User (Default) **Copy** link. A new User Template displays in the template list with the same user options as the system User (Default) template.

User Templates

Name	Action
System User (Default)	View Copy
Copy of System User (Default)	View Copy Delete
Marketing Template	View Copy
Sales Template	View Copy Delete

3. Click the **View** link on the Copy of System User (Default) line. The User Template page opens with the current options displayed.

4. Click the **Modify** link in the User Template - Copy of System User (Default) section.

5. Rename the template in the Name section of the page, and update the template options, as appropriate.

6. Click **Update** when changes are complete.

7. Navigate to **Business** > **Users** to go back to the list of users.

9.1.2 Modifying an Existing Template

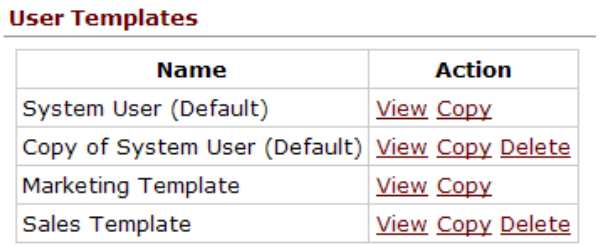
Prior to adding users on a new system, determine the required feature options for which users (e.g. Off-site Access to Outside Lines or the ability to create conferences).

For a list of users for each template, select the View link for the appropriate template, and navigate to the Template Last Applied To Users section for the complete list.

To modify an existing user template:

1. Navigate to **Business** > **Users**, and go to the User Templates section.

2. Click the **View** link on the line of the template that needs modification. The User Template page opens with the current options displayed.


User Templates

Name	Action
System User (Default)	View Copy
Copy of System User (Default)	View Copy Delete
Marketing Template	View Copy
Sales Template	View Copy Delete

3. Click the **Modify** link, and update the template options, as appropriate.

4. Click the **Update** button when changes are complete.

5. Navigate to **Business** > **Users** to go back to the list of users.

9.1.3 Deleting User Templates

Templates with associated users cannot be deleted, so those links will be grayed out. Apply a different template to all associated users before attempting to delete it.

To delete a User Template:

1. Navigate to **Business** > **Users** and go to the User Templates section.

2. Locate the template, and click the **Delete** link in the Action column. The page refreshes with the available User Templates.

9.2 User Template Settings

Section	Setting

System Features	• Enable Voicemail
	• Maximum Number of Voicemails
	• Call Answering maximum message recording time
	• Message Center maximum message recording time
	  • User has permission for Off-Site Access to outside lines
	  • User has permission to send voicemail to all users (by dialing 9 from voicemail Send menu)
	• Operator Extension (used when caller dials 0 when leaving voicemail)
	• End Message recording (Voice Activity Detection)
	• User has permission to modify extension's call routes
	• User has permission to create conferences
	• User is a Call Queue Supervisor
	• Call Assistant Active Calls
	  • Brief Display
	  • Full Display
	  • Not Displayed
	• Call Assistant Recording Calls Allowed
	• Maximum size Universal Inbox
	• Default Language
	• Enable Hot Desking
	  • Maximum Logged in Time
	  • Caller ID Name
	  • Caller ID Number

Feature Eligibility	• Allworx Reach Eligibility Count • Allworx Interact Professional Eligibility Count
Follow Me Calling	• Password required to accept calls • Require caller to record name

Auto Attendant Selection	• Check boxes below to include the user in the Dial-By-Name and Dial-By-Directory menus for the attendant:
	  • Auto Attendant 1
	  • Auto Attendant 2
	  • Auto Attendant 3
	  • Auto Attendant 4
	  • Auto Attendant 5
	  • Auto Attendant 6
	  • Auto Attendant 7
	  • Auto Attendant 8

	• Auto Attendant 9
POP3 Mail Transfers	• Email and Voicemail messages • Email message only • No messages
VPN Settings	• Allow VPN Settings
External POP3 Accounts	• Poll Period

User settings NOT included in User Templates

Section	Setting
Presence	• Presence choices • Prevent caller from leaving a message
Roles	• System Administrator • Phone Administrator • Network Administrator • Support Technician
Follow Me Calling	• Primary Phone (used for quick transfer from cell phone)
Voicemail Notification and Escalation	• Notification and Escalation Disabled • Notification Mode • Escalation Mode
Email Forwarding	• SMTP Server Configuration
VPN Settings	• VPN Password
External POP3 Accounts	• Mail Server / Username on Mail Server / Password • Adding and Modifying Users • Adding New Users

When adding a new user, the feature configuration settings display after choosing a template.

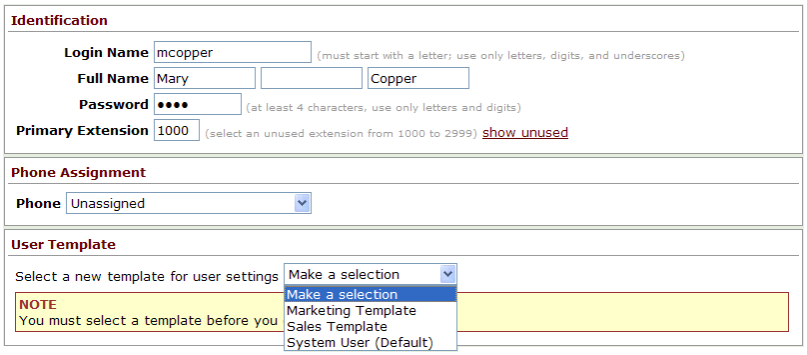
To add a new user: Need a new screen shot.

1. Navigate to **Business** > **Users** and click the **add new user** link.

2. Add the Identification information into the fields.

3. Go to the Phone Assignment section and select the appropriate phone from the drop-down menu, if applicable.

4. Go to the User Template section and select the appropriate template from the drop-down menu. The page refreshes with a System Features section with the template settings as well as other settings that are not part of the template.


Identification
Login Name mcopper (must start with a letter; use only letters, digits, and underscores)
Full Name Mary Copper
Password •••• (at least 4 characters, use only letters and digits)
Primary Extension 1000 (select an unused extension from 1000 to 2999) show unused
Phone Assignment
Phone Unassigned
User Template
Select a new template for user settings Make a selection
Make a selection
Marketing Template
Sales Template
System User (Default)
NOTE
You must select a template before you

5. Update the System Features section, as appropriate. The system automatically flags any changes to the settings with an exclamation point (!) to indicate that the template has been overridden.

6. Click **Add** to add the user to the system. The Users page displays. The users table on the Users page displays the last applied template that to each user. If any template settings for a given user have been overridden, the User Template name will be marked with an exclamation point (!).

9.3 Modifying Users

When modifying templates that have already been applied to users, changes are NOT automatically applied to the users of that template. In order to update the user settings, reapply the template to each associated user.

To modify the user's template:

1. Navigate to **Business** > **Users**, and click the **add new user** link. Clicking on the template name opens the template's View page.

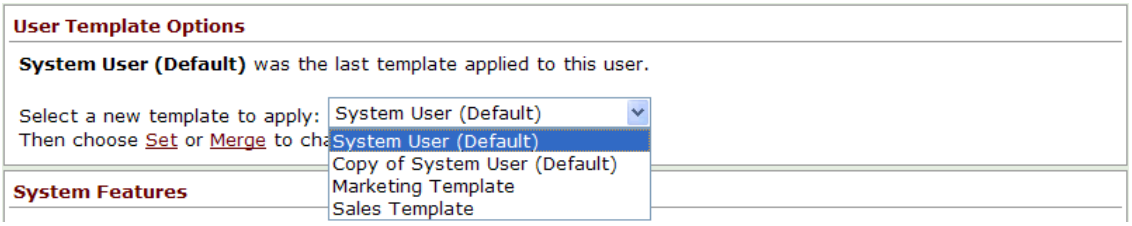
2. Click the **Modify** link in the Action column for the appropriate user. The user template opens for changes.

3. Update the user sections as appropriate. In the User Template Options section, when changing the user template:

   a. Select the new template from the drop-down menu.

   b. Click **Set** to apply all the settings to the user or Click Merge to keep the override settings and apply the remaining settings of the new template. Merge will not change any settings that were overrides from the last applied template.

Whether Set or Merge is used, additional changes can be made before selecting the Update button.


User Template Options
System User (Default) was the last template applied to this user.
Select a new template to apply:
System User (Default)
Then choose Set or Merge to cha
System User (Default)
Copy of System User (Default)
Marketing Template
Sales Template
System Features

4. Click **Update** for the changes to take effect. The User page displays. The users table on the Users page displays the last applied template that to each user. If any template settings for a given user have been overridden, the User Template name will be marked with an exclamation point (!).

10 Adding Handsets

10.1 Allworx Desk Phones

The following procedures apply when connecting the Allworx phones to the same LAN as the Allworx server. If you are connecting to a different network, see Chapter 17 Remote Allworx Phones and Port Expanders.

10.1.1 DHCP IP Addressing

By default, Allworx phones have DHCP client enabled. When connected to networks on which there is a DHCP server, the phones will receive their network setup from the DHCP server. In addition to the network setup, configure the phones with the IP address of the Allworx server, in order to register. If the DHCP server is the Allworx server or if a third party DHCP server is used and properly configured, this enables plug-and-play installation of Allworx phones.

- If the Allworx server is the network's DHCP server, the phone will register without additional configuration.
- If the phone is getting its IP address from a DHCP server that is not the Allworx server, the DHCP server can be set up to provide the phone with the Allworx server's IP address. Do ths using the TFTP boot server (option #66) in the DHCP data set. If the TFTP boot server is set properly, the phone will need no additional configuration.
- If the phone is getting its IP address from a non-Allworx server's DHCP server and the DHCP server does not provide the TFTP boot server IP address, then the boot server's IP address (the address of the Allworx server) must be set manually on the phone. Perform the following procedure:

1. Press the CONFIG soft key on the phone.

2. Using the arrow buttons, highlight Network Settings and press the Select button ☑. If you are prompted for a password, enter "allworx" using the numeric keypad, and then press the Select button ☑. The Network Settings menu displays and DHCP highlights.

3. Use the arrow keys to highlight Edit Boot Server. Press the Select button ☑. Using the numeric keypad, enter the IP address of the Allworx server. Use the asterisk key '*' for periods. When you are done, press the Select button ☑.

4. Press the EXIT soft key repeatedly until asked to save the settings. Press the YES soft key.

5. Reboot the phone by pressing the CONFIG soft key, using the arrow keys to highlight Reboot Phone, and pressing the Select button ☑. Answer Yes to

the prompts. The phone will reboot and connect using the DHCP and manually entered settings.

10.1.2 Static IP Addressing

If assigning the phones static addresses rather than using DHCP, the following network settings will have to be entered manually on the phone:

- Boot server (the Allworx server's IP address or domain name)
- Time Server (optional, can be an IP address or domain name)
- DNS Server IP
- Phone IP
- Netmask IP
- Gateway IP

To update the Static IP Address:

1. Press the CONFIG soft key on the phone.
2. Using the arrow buttons, highlight Network Settings and press the Select button ☑. If you are prompted for a password, enter "allworx" using the numeric keypad then press the Select button ☑. The Network Settings menu displays and DHCP highlights.
3. Press the Select button ☑ until the DHCP setting is Disabled.
4. Use the arrow keys to highlight Edit Boot Server. Press the Select button ☑. Using the phone's keypad, enter the IP address or the domain name of the Allworx server. Use the asterisk key '*' for periods. When you are done, press the Select button ☑.
5. Highlight, select, and enter the remaining settings from the list, above.
6. Press the EXIT soft key repeatedly until you are asked to save the settings. Press the YES soft key.
7. Reboot the phone by pressing the CONFIG soft key, using the arrow keys to highlight Reboot Phone, and pressing the Select button ☑. Answer Yes to the confirmation. The phone will reboot and connect using the DHCP and manually entered settings.

Note: You may abort an Allworx phone's boot cycle by pressing the MUTE/DND button three times. If the phone is running firmware from server software release 7.3 or lower (phone firmware version 2.3 or lower), press the RELEASE button three times, instead.

10.1.3 VLAN Settings

If the site's network utilizes VLANs, additional configuration is necessary.

Allworx phones running firmware from server software release 7.2 or higher (phone firmware version 2.2 or higher) default to VLAN auto configure. If the network utilizes LLDP-MED or CDP to set network host VLAN configurations, the Allworx phones will be properly configured. If the phone is running an earlier version of firmware or if the network does not use LLDP-MED or CDP, configure the VLANs manually.

To set up VLANs on the phone:

1. Press the CONFIG soft key on the phone.
2. Using the arrow buttons, highlight Network Settings and press the Select button ☑. If you are prompted for a password, enter "allworx" using the numeric keypad then press the Select button ☑. The Network Settings menu displays and DHCP highlights.
3. Use the arrow keys to highlight VLAN. Press the Select button ☑ until the VLAN setting is Manual.
4. Use the arrow buttons to highlight Phone VLAN Settings. Press the Select button ☑.
5. Enter the value for Phone VLAN ID and press the Select button ☑.
6. Enter the value for Phone VLAN Priority and press the Select button ☑.
7. Use the arrow buttons to highlight PC VLAN Settings.
8. Enter the value for PC VLAN ID and press the Select button ☑.
9. Enter the value for PC VLAN Priority and press the Select button ☑.
10. Press the EXIT soft key repeatedly until you are asked to save the settings. Press the YES soft key.
11. Reboot the phone by pressing the CONFIG soft key, using the arrow keys to highlight Reboot Phone, and pressing the Select button ☑. Answer Yes to the confirmation. The phone will reboot and connect using the DHCP and manually entered settings.

Note: If the phones are running an earlier version of the firmware or if the network does not use LLDP-MED or CDP, it may be more efficient to upgrade the phones prior to attempting to connect them to the site's network. Do this in the lab by connecting the phones to an Allworx server that is running the server software release 7.2 or higher.

10.1.4 Handset Network Profiles

Handset Network Profiles are network and registration settings that can be stored on the phone and selected for usage during different situations. Usage examples include connecting to a 2nd Allworx server for disaster recovery purposes or temporarily connecting to their Allworx server from home. These can be accomplished by having

the user or the server select a profile and avoids the need to manually change settings on the phone.

10.1.5 On-phone Archive Profile

An On-phone Archive profile can be stored on the phone using the phone's CONFIG menu. Download additional profiles to the phone from the server using the Handset Preference Groups.

To create the On-phone Archive profile:

1. Press the CONFIG soft key on the phone.

2. Using the arrow buttons, highlight Network Settings and press the Select button. If the phone is already connected to the Allworx server and you are prompted for a password, enter the password that is defined on the server's Servers > VoIP page then press the Select button. The Network Settings menu displays.

3. Using the arrow buttons and the Select button, configure the network settings as desired.

4. Press the ARCHIVE soft key. This saves the current network settings as the Archive profile.

   The Archive profile will be available even if the Network Settings are changed and/or if rebooting the phone.

10.1.6 Server-based Profiles

The Allworx Server Administrator can create up to three Handset Network Profiles for a given phone on the server, and creates/assigns the templates containing the profiles to Handset Preference Groups.

To create Templates:

1. Navigate to **Phone System** > **Handsets** page.

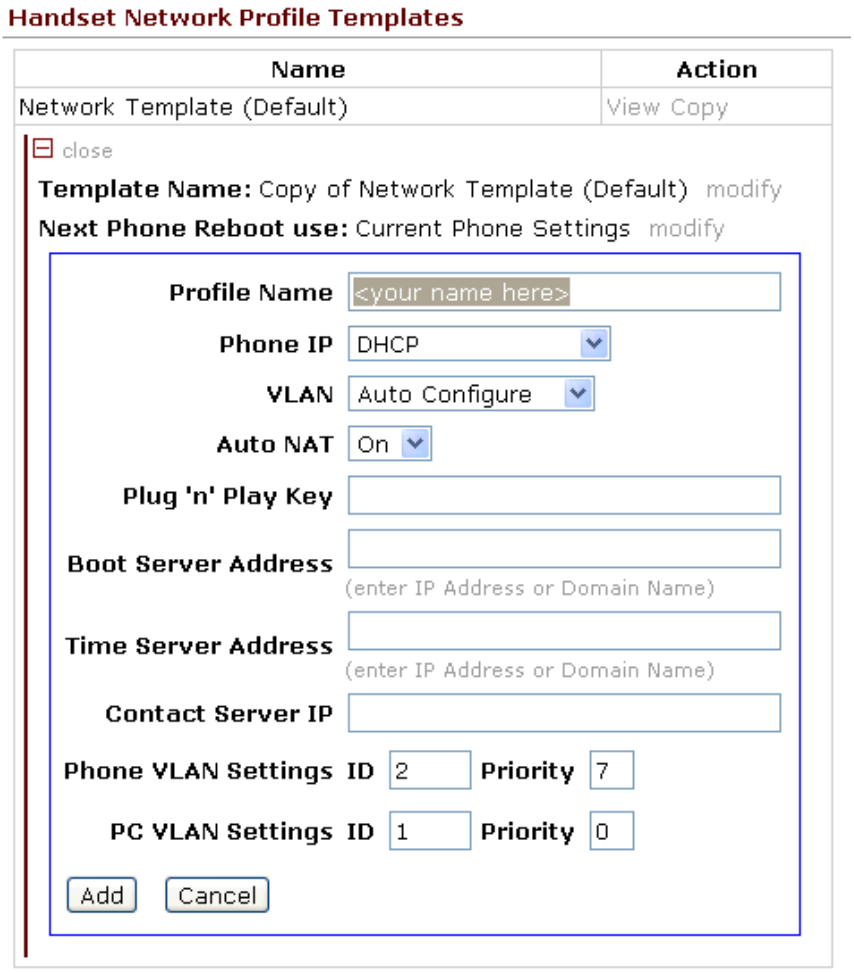
2. Go to the Handset Network Profile Templates section, and click the **Copy** link for the Default template. This creates a new template.

3. Click the **View** link on the new template.

Handset Network Profile Templates
Name
Action
Network Template (Default)
View Copy
close
Template Name: Copy of Network Template (Default) modify
Next Phone Reboot use: Current Phone Settings modify
add profile (0 of 3 profiles have been added)

4. Click the **modify** link on the Template Name line to rename the template to a more descriptive name, and then click the **Update** button.

5. Create a Network Settings Profile, click the **add** profile link.



6. Name the profile and fill in the desired settings.

Profile	Description
Profile Name	The name can be different from the Template name and must be different than any other profile name in this template.
Phone IP	Choices are DHCP and Use Phone Setting. It is not possible to assign a static IP address to a phone using a Handset Network Profile.
Boot Server Address	A domain name may be entered rather than an IP address.
Time Server Address	A domain name may be entered rather than an IP address

7. Select **Add**. Add more profiles in the same way, if desired.

8. Go to Next Phone Reboot use and click the **modify** link to choose which profile will be used by the phone on its next reboot. A drop-down list of the current profiles is provided:

   - Current Phone Settings
   - Phone Archived Profile
   - Any newly created profile(s)

Note: Phone settings can override the Next Phone Reboot setting. To verify the Handset Network setting takes effect:

9. Press the CONFIG soft key on the phone.

10. Press the down arrow key to highlight Preferences.

11. Press the Select button ☑.

12. Press the down arrow key to highlight Server Profile Selection.

13. Press the Select button ☑. Two options display - Use Server Selection or Ignore Server Selection.

14. Verify Use Server Selection is highlighted to permit the Handset Network Template setting to take effect, and press the Select button ☑.

15. Press the EXIT soft key on the phone twice to get back to the main screen.

After creating a template, assign it to the phone using the Handset Preference Groups. Perform the following procedure (See Handset Preference Groups on page 71 for more information):

Note: Default templates cannot be modified.

16. Navigate to the **Phone System** > **Handsets** Page.

17. Locate the handset in the table, and click the corresponding **View Configuration** link. The View configuration dialog box displays.

18. Locate the Handset Preference Group section, and click the **Modify** link.

19. Go to the Handset Preference Group section, and select the new template from the list.

20. Click **Update** to save changes.

21. Navigate to the **Phone System** > **Handsets** Page. Locate the Handset Network Profile Templates section.

22. Select a Handset Network Profiles Template, if not already selected.

23. Select **Update** to save the changes.

24. Reboot the phones in the Handset Preference Group. The phone will reconnect using the prior network settings. All subsequent reboots will use the settings provided by the Handset Network Profiles Template.

25. Navigate to **Phone System** > **Handsets**.

26. Click **Reboot Allworx Phones** to reboot all the phones in the system, or locate the affected phones in the SIP Handsets list and click Reboot in the action column to reboot specific phones in the system.

Note: Phone users can manually select a profile on their phones by selecting CONFIG > Network Profiles and choosing a profile.

10.1.7 Plug-and-Play

Allworx phones can be added to the system using plug-and-play installation. Once the network connection to the server is set up, the phones will register with the server the next time they reboot or power up. To add VoIP phones manually from other manufacturers, see Generic SIP Phones on page 64.

If you are having difficulty configuring a phone, restore it to factory defaults and reapply the desired settings.

If an Allworx IP phone is booted on the network and a new version of phone software is available, the phone will ask if you would like to load the upgrade.

Assign an Allworx IP phone to a user or replace an existing phone when it is first connected to the Allworx system. The following options are available:

- Assign a user to the phone (**NOW** > **ADD**). Select from the list of all system users or limit the list to those users with no phones assigned. Reboot the phone to complete the user assignment.

- Replace compatible existing Allworx phone (**NOW** > **REPLACE**). Select from the list of the all Allworx system phones. The phone web administration password, if any, is required to replace a phone. Navigate to **Web Admin Servers** > **VoIP** to view or change the password. Reboot the phone to complete the phone replacement.

- Defer user assignment (LATER). The user assignment prompts displays on subsequent reboot if the phone has not already been configured from within the Web Admin.

- Assign via the Web Admin (VIA WEB). The user assignment prompt will not display on subsequent reboots.

- When a plug-and-play phone is registered with the server, it displays on the **Phone System** > **Handsets** page in the SIP Handsets section. It displays the correct model and the MAC address.

10.1.8 Plug-and-Play Security

Allworx handset plug and play installation provides a convenient method for adding phones to the Allworx server. However, this feature permits unauthorized users to add phones to the server without the knowledge of the System Administrator. The Allworx System provides security by permitting the System Administrator to disable plug and play installation of handsets.

The following options are available on the **Servers** > **VoIP** > **Modify** page:

Option	Description
Disable Phone Creates via LAN Plug and Play	This option prevents handsets on the Allworx server LAN from installing by plug and play. By default, this option is unchecked; meaning plug and play is enabled. When checked, phones must be manually added on the Phone System > Handsets page.
Disable Phone Creates via WAN (Remote Phone) Plug and Play	This option prevents handsets on the Allworx server WAN (i.e. remote handsets) from installing by plug and play. Installation is prevented, even if the remote handset is programmed with the server's plug and play secret key. By default, this option is unchecked; meaning plug and play is enabled. When checked, phones must be manually added on the Phone System > Handsets page.
Disable Assign User at Phone	This option prevents assigning a user to a newly installed phone using the plug-and-play User Assign menu on the phone. Note: Previously added Handsets to the system will re-register with the server, regardless of these settings.

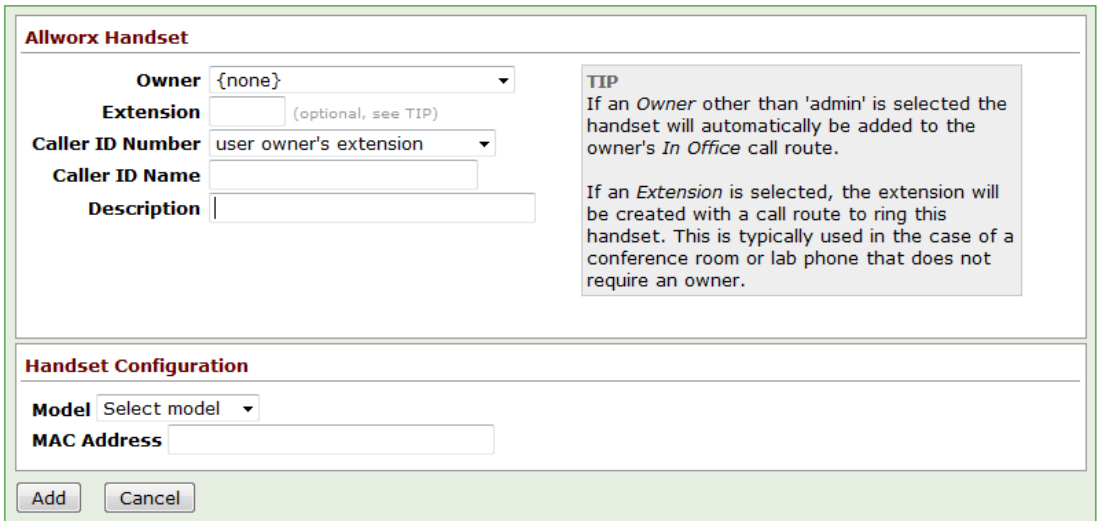
10.1.9 Manually Adding Allworx Phones

The Allworx server supports the manual adding of phones to the system. Do this if disabling the Plug and Play for security reasons or when configuring the phone prior to plugging it into the network (For example, to pre-configure the server before an installation at the customer site).

To add an Allworx phone manually:

1. Navigate to the **Phone System** > **Handsets** page.

2. Click the **add new Allworx Handset** link in the SIP Handsets section. The SIP Handset page displays. (need new screen shot)


Allworx Handset
Owner
{none}
Extension
(optional, see TIP)
Caller ID Number
user owner's extension
Caller ID Name
Description
TIP
If an Owner other than 'admin' is selected the handset will automatically be added to the owner's In Office call route.
If an Extension is selected, the extension will be created with a call route to ring this handset. This is typically used in the case of a conference room or lab phone that does not require an owner.
Handset Configuration
Model
Select model
MAC Address
Add
Cancel

3. Fill in the fields in the SIP Handset section. The system requires an entry in Description, Model, and MAC Address fields.

Note: If there is an incorrect the MAC address entry, then when the phone boots on the network, the server has a duplicate entry for this phone. It will plug-and-play register itself with the system using the correct MAC address and will not use the manually entered information.

4. Locate the Handset Configuration section, and select the Allworx phone model from the drop-down list.

5. Enter the MAC Address information in the field.

6. Click **Add** to add the new handset to the server.

10.2 Reach Handsets

The Allworx Reach Mobile Client application can be loaded on iOS and Android devices to provide soft phone capability. See the Allworx Reach User's Guide for information on using the Allworx Reach Mobile Client.

To connect Reach Handsets, install Reach licenses on the server and update the Reach server configurations.

10.2.1 Reach Handset Licensing

Each Reach handset requires a license in order to operate. The Allworx Server 7.5 includes one Reach license with each server. To add more Reach handsets requires a purchase and installation of additional Reach feature keys. Available feature keys provide one, five, or 10 licenses each. To enable larger numbers of Reach handsets, install multiple feature keys of the same or different license counts.

Allworx Server Administrators can allocate licenses in two ways:

- Reserve licenses for specific users by manually configuring their Reach handsets.
- Authorize users to claim licenses on a first-come-first-served basis using Plug and Play.

To reserve licenses for specific users:

1. Navigate to **Phone System** > **Handsets,** and locate the SIP Handsets section.

2. Click the **add new Allworx Reach Handset** link. If the link is unavailable, purchase more licenses.

3. Fill in the fields in the SIP Handset section. The system requires filling in the Description field; however, the user cannot claim the Reach license until the Allworx Server Administrator fills in the owner field.

4. The description field requires only Description, although a user cannot claim it unless the Owner is selected.

5. Click the **Add** button to save the changes.

To authorize users to claim licenses:

1. Navigate to **Business** > **Users**.

2. Locate the user, and click the **Modify** link.

3. Locate the Feature Eligibility section and enter the number of Allworx Reach activations this user can claim.

4. Click **Update** to save the changes.

Note: By authorizing users to claim licenses, it is possible to over-allocate the installed licenses. If users have claimed all installed licenses, the system blocks attempts to install additional Reach handsets. However, if the Allworx Server Administrator creates a Reach handset and assigns an owner before using up the licenses, the user listed as the owner has one of the installed licenses and is able to register their Reach handset.

10.2.2 Managing Reach Licenses

To manage Reach licenses:

1. Navigate to **Maintenance** > **Feature Keys**.

2. Locate the Feature Keys section, and then the Allworx Reach line item. The total number of installed and used licenses displays.

3. Click the **Allworx Reach** link. The Allworx Reach dialog box displays.

   Click the **View** link to see handset information about a specific user.

   Click the **Delete** link to remove the Allworx Reach handset from the system and the associated Call Appearances. Click **Delete** to confirm.

   Click the **Disable** link to prevent any further communication with the Allworx Server. The link changes to **Enable**. Click **Enab**le for communication with the Allworx Server.

10.3 Installation Assistance for Reach Users

After you have reserved or allocated the Reach application licenses for all users, email the installation instructions to the user's mobile device.

1. On the server, navigate to **Business** > **Users.**

2. Locate the first user in the Users section.

3. Click on the Welcome page icon next to the username in the table. The Welcome page displays.

4. Locate the Feature Eligibility section of the Welcome page.

5. Copy the Feature Eligibility section and paste it into an email window. Use "Allworx Reach Mobile Client Installation Information" as the Subject line of the email.

6. Attach the Allworx Reach User's Guide to the email. It is available on the Allworx Portal (www.allworxportal.com) and on the Allworx Reach Installation web page (get.allworx.com/reach). Send the email to the user.

7. Repeat steps 3 through 6 for each of the remaining eligible users.

10.4 Generic SIP Phones

To configure a 3rd-party SIP phone:

1. Navigate to **Phone System** > **Handsets**.
2. Click the **add new Generic SIP Handset** link. The SIP Handset page displays. If the link is unavailable, purchase more licenses.
3. Fill in the fields in the SIP Handset section. The system requires an entry in the Description field.
4. Locate the Handset Configuration section and enter the Number of Lines.
5. Enter a Login ID and Password for the phone to authenticate with the server.

Note: The Login ID must be unique. Do not use the same Login ID on multiple phones.

6. Click **Add** to add the new handset to server.
7. Configure the 3rd-party phone following its particular configuration instructions using the User ID, Login ID, (shown on the updated **Phone System** > **Handsets** page), and the entered password.

   When registering a phone with the server, its entry on the Handsets page will indicate it is registered that by displaying an expiration date and time.

Note: Each Generic SIP handset requires a license in order to operate. Server keys provide licenses. Allworx Server Administrators can add a small number of handsets without a key (2 on 6x12 and 6x; 5 on the 24x and 48x). Generic SIP handsets that are on the system prior to upgrading to 7.5 will continue to operate without licensing. Available feature keys provide one, five, or 10 licenses each. To enable larger numbers of Generic SIP handsets, install multiple feature keys of the same or different license counts.

Note: Allworx 6x12 servers are limited to a maximum of two (2) generic SIP phones. Since the Allworx Server Administrator can install two without a license, no feature keys are required for 6x12 servers.

10.5 Analog Phones

To connect an analog phone to the server:

1. Plug the phone into one of the server's FXS phone ports reserved for Inside Phone Extensions.
2. Lift the phone receiver so that the phone is off hook, and refresh the browser window. The phone displays in the Analog Handsets section of the page.
3. Hang up the phone receiver.

Note: Analog phones plugged into Port Expander FXS ports do not automatically display on the Handsets page, add manually.

10.6 Testing Phones

Below are some suggested steps for verifying that a phone is set up correctly:

- Dial 400† for Auto Attendant.
- Enter '#7'. The Auto Attendant will play back information about the phone configuration.
- Hang up. The phone will ring back.

If any of these steps fail, check:

- Physical wiring between phone and server.
- Network settings.
- Phone and server configuration.

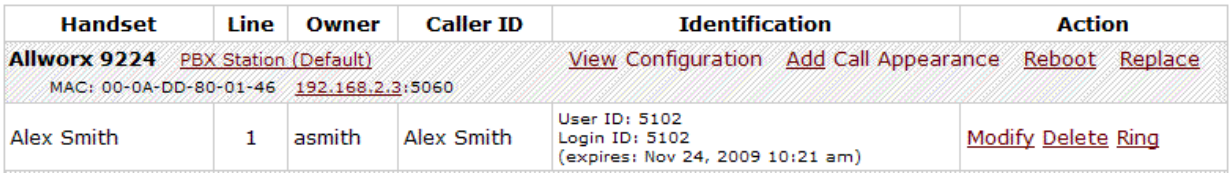
† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

11 Configuring Allworx Phones

To configure Allworx IP phones:

1. Navigate to **Phone System** > **Handsets**.

2. Check the Show boxes for **Allworx Handsets** and **Allworx Reach Handsets**. The table lists all installed Allworx desk phones and Reach handsets.



Handset	Line	Owner	Caller ID	Identification	Action
Allworx 9224 PBX Station (Default) MAC: 00-0A-DD-80-01-46 192.168.2.3:5060				View Configuration Add Call Appearance Reboot Replace	
Alex Smith	1	asmith	Alex Smith	User ID: 5102 Login ID: 5102 (expires: Nov 24, 2009 10:21 am)	Modify Delete Ring

The following settings and actions are available:

Phone Function	Description	Applies to		
		Allworx Desk Phone	Allworx Reach Appl.	Allworx Generic SIP Phone
PBX Station (Default)	Name of the Handset Preference Group assigned to the phone. PBX Station (Default) is the system. Clicking the link will display the settings of the group. See Handset Preference Groups on page 71 for more information.	Yes	Yes	No
View Configuration	Enable viewing and modifying the phone's PFK configuration and Handset Preference Group membership. See Handset Preference Groups or Programmable Function Keys (PFKs) on page 83 for more information	Yes	Yes	No
Add Call Appearance	Enable creating another Call Appearance for this phone. Multiple Call Appearances enable a single phone to handle calls for users.	Yes	No	No
Reboot	Restart the phone. The reboot occurs after a short delay on an idle phone. If the phone is in use, the reboot will not start until the phone is idle. A Reboot Allworx Handsets button is available at the top of the SIP Handsets section of the page to reboot all Allworx phones with one action. One handset reboots every 10 seconds, until all phones reboot.	Yes	Yes	No

Phone Function	Description	Applies to		
		Allworx Desk Phone	Allworx Reach Appl.	Allworx Generic SIP Phone
Replace	Enable substituting the phone with another phone. The Replace feature transfers all of the original phone's configuration parameters and settings to the new phone. Use this function to replace a defective handset with a new one. If the replacement has fewer PFKs than the original handset, the system copies the PFKs defined on the original handset, in order from the bottom – left of the PFKs, up to the number of PFKs on the replacement handset. The system replaces original handset PFK definitions that are unsupported on the replacement handset with default values.	Yes	No	No
IP Address	This is the IP address assigned to the handset. Clicking the link will open the Phone Administration page in a separate browser window if your PC has a network communications path to the phone; see Phone Web Administration on page 92, for more information.	Yes	No	No
Setup	Display the Allworx Reach Installation Assistance website.	No	Yes	No
Modify	Enable modification of handset Call Appearance parameters.	Yes	Yes	Yes
Delete	Delete the Call Appearance from the phone. If there is only one Call Appearance or if you click Delete on the first Call Appearance, the server deletes the phone From the system.	Yes	Yes	Yes
Ring	Ring the phone. Use this function to test that the phone is connected and operational.	Yes	Yes	Yes

Reboot the phones after changing any settings on the View Configuration page for the changes to take effect. The Allworx Server Administrator can do this using the Reboot link described above or manually, from the phone.

11.1 View Configuration

Click the **View Configuration** link to see the phone configuration parameters for each SIP handset. In addition to the summary information, the following settings display:

- Handset Preferences Group - displays the current preference group. Modify enables updating the current preference group.
- Template Options - Save enables the user to safe the current configuration as a template. In the Apply line, the user must select a handset configuration, and then click the Apply button.
- Programmable Function Keys - Modify enables the user to adjust the PFK assignment options.
- Call Assistant Appearances - checkboxes enable the user to adjust the settings for each appearance.

Any changes require a reboot of the Allworx phone.

11.2 Multiple Call Appearances

Every phone that registered automatically configures with one Call Appearance with two PFKs assigned to the Call Appearance. Adding a second Call Appearance creates another address that can be used in call routes.

Example: Administrative Assistant

The office administrative assistant, Susan Bell, must be able answer the phones of two executives: Tom Brown and Lisa Andrews.

To accomplish this:

The assistant has one Call Appearance on her phone for her own calls. New Call Appearances will be added for each executive. Tom Brown is set to own the first new Call Appearance. Lisa Andrews owns the third Call Appearance.

PFKs for each of the new Call Appearances would be added to Susan's phone.

The call routes for the executives would be set to ring their own handset and their Call Appearance on the assistant's handset in parallel. The PFK corresponding to the executive that is receiving a call will flash so that Susan will know who is being called and can answer accordingly (e.g. "Good morning, Tom Brown's office…")

11.3 Handset Preference Groups

A Handset Preference Group is a set of handset options and a list of handsets with those options. Handset Preference Groups enable configuring handsets easily and efficiently. Apply custom configurations to any or all of a site's handsets by creating a Handset Preference Group, specifying the handset options, and assigning handsets to the group. No additional configuration steps are required to apply the options. Reboot the handsets for the changes to the group's settings to take effect.

The Handset Preference Groups are displayed in a table in the Phone System > Handsets page, with options to View or Copy the PBX Station (Default) and Key System Station (Default) templates or View, Copy, or Delete other template groups. The PBX and Key System Default groups that contain the factory default handset options for their respective modes. New Handset Preference Groups are created for each unique combination of handset options for existing phones when Allworx servers are upgraded to Release 7.0 or higher. Phones with those options automatically become members of the corresponding group.

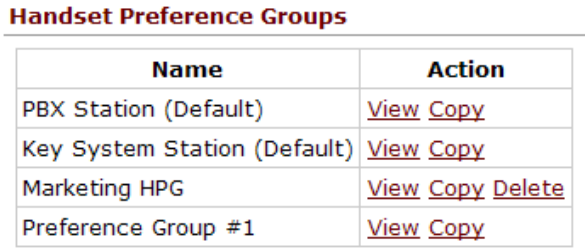
Note: Settings for existing handsets are NOT changed in this process.

11.3.1 Creating Handset Preference Groups

To create a new Handset Preference Group:

1. Navigate to **Phone System** > **Handsets**, and go to the Handset Preference Groups section

2. Select a default template, and click the **Copy** link. A new Handset Preference Group template displays with the name Copy of X (Default) in the template list with the same user options as the default template.



3. Click the **View** link of the new template. The Handset Preference Group page opens with the current options displayed.

4. Click the **Modify** link in the template.

5. Rename the template in the Handset Preference Group Name field, and update the template options, as appropriate.

6. Select **Update** when changes are complete.

7. Navigate to **Business** > **Users** to go back to the list of users.

   The SIP Handset table displays the Handset Preference Group of each handset. Clicking on the group name opens the group's View page.

11.4 Handset Preference Group Settings

Handset Preference Group configuration settings:

Option	Description	Applies to	
		Allworx Handsets	Allworx Reach Application
Handset Preference Group Name	Description of the Handset Preference Group.	Yes	Yes
Station Mode Selection	Change the phone behavior to PBX Behavior or Key System Behavior. • It affects how some of the PFK functions work, see Programmable Function Keys (PFKs). • It affects how the Hold button on a handset works. When in Key System mode, the Hold button performs a system wide call park operation that enables answering the call by any handset. When in PBX mode or the active call is on a Call Appearance PFK, the Hold button performs a station-based hold operation that is exclusive to the handset	Yes	No
Call Assistant / TSP Driver (TAPI) Display*	Selects which call information is displayed in the Call Assistant and in TAPI-compliant PC applications that receive calls using the TSP driver. Configure the phone to cause these applications to display either dialed name/number or regular caller ID name/number information but not both.	Yes	No
Call Assistant Display Mode	Controls how this phone displays in Call Assistant Directory tab. The options are: • Normal – The extension and the phone's status are displayed • Hide Status – The extension is displayed and the phone's status always shows as Idle Hide Completely – Neither the extension nor the status is displayed	Yes	No
Call History Size*	Specifies the number of calls the station will keep in call history. If you specify a value of zero, the phone will not maintain a Call History to help preserve	Yes	No

	the handset user's privacy.		
Clock Mode*	Specifies the phone station displays the idle screen clock in 12- hour or 24-hour format. There is an option to disable the clock display if the phone is not synchronized to network time or the handset user does not need the time to be displayed	Yes	No
Codec Preference Order	Set the preferred codec order in the phone. The codec is the method of encoding/decoding the audio sent to and received by the phone. The two possible codec's are G.711 and G.729A. G.711 preserves voice quality, but takes more bandwidth. G.729A takes less bandwidth, but reduces voice quality. Note: This setting defines the order of codec selection. Not all codec's are supported for all call types (for example, accessing the server Auto Attendant requires G.711). The phone will attempt to use the first choice but will use whichever codec is required to support the call.	Yes	Yes
Daylight Saving Time	Specify if the handset will use Daylight Savings Time (DST) to compute its local time. Select use current server setting if the telephone is in the same time zone as the server. For a remote phone, you may want to use the DST setting of its actual location	Yes	No
Hold Button Mode*	Controls the behavior of the phone's Hold button: • Hold Calls, Park Lines – Holds calls on call appearances. Parks calls on line appearances. • Hold then Park – If pressed and released quickly, the call is held. If the button is pressed for longer, the call is parked. • Park then Hold – If pressed and released quickly, the call is parked. If the button is pressed for longer, the call is held	Yes	No
Hold Reminder Mode*	Specifies how the phone operates relative to a hold reminder. Hold reminder is a feature to remind the handset user that they have left a phone on hold:	Yes	No

	• No Reminder – Never remind the user. • On Hook – Beep whenever the phone is put on-hook with call(s) on hold. • Timer – Beep after the call has been on-hold for the specified period. • On Hook and Timer – Beeps after the holding call for the specified period or if placing the handset on hook.		
Hold Reminder Timeout*	Length of time (in seconds) a call is on hold before the call beeps, if Hold Reminder mode is Timer. If Hold Reminder is another option, the Hold Reminder Timeout is unavailable.	Yes	No
Jitter Buffer Size	Variation in network audio packet the phone experiences latency, resulting in a reduction in audio quality. The phone uses a jitter buffer to maximize the audio quality when jitter occurs. Use this configuration parameter to alter the size of the jitter buffer.	Yes	No
Message Waiting Indication	Indicates how the phone should display indication of a voicemail message waiting for the user who is the owner of this handset. If the station has no owner, then this setting has no meaning. The possible settings are: • No Indication - The handset does not provide a visual display that a message is available. • Visual – The red LED indicator on the Messages button is illuminated. • Stutter Dial Tone – The station emits a stutter when a dial tone is started for each call. • Both – The station provides a visual indicator and a stutter dial tone	Yes	No
Messages Button Operation*	Controls the behavior of the phone's Messages Button: • Displays Messages List – Pressing the Messages button will permit viewing the voicemail and managed using the phone's display. Pressing the Messages button a second time will call the Message Center so audio menus can be used to manage voicemail.	Yes	No

	• Calls Message Center – Pressing the Messages button calls the Message Center so audio menus can be used to manage voicemail		
Missed Call Tracking*	Display the number of calls missed since last making or receiving a call. Select which missed calls to track: • Call Appearances Only • All Appearance Types	Yes	No
Mobile data Access	Enable the phone to access WiFi and Mobile Networks.	No	Yes
Off Hook Digits Dialed	Enable the phone to dial specified digits automatically whenever the phone is off hook. • Example 1: this is a service phone placed at a locked door or loading dock where all dialing is disabled and you want the phone to dial automatically a predefined number when it is taken off hook. • Example 2: the phone automatically dials 9† to get an outside line. Note: These digits will always be dialed when the phone is taken off hook, so this might interfere with other uses of the phone. For example, if the phone is configured to automatically dial '9', the user will not be able to use PBX features that don't start with '9' (e.g. Call Park, Call Forwarding, etc.)	Yes	No
Paging Mode*	Specify the conditions for hearing pages on this handset. The choices are: • Pages Always Accepted. • Pages Never Accepted. • Pages Only Accepted when the station is on-hook	Yes	No
Redial Memory*	Sets the length of time the redial memory persists in the phone station. This setting is useful to adjust to maintain privacy on phones that are used in shared areas	Yes	No
RTP Media Port Range	Specifies the range of UDP ports used for Real Time Packet communications.	Yes	No

† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

	Using a maximum range of values makes the phone the most secured from snooping and denial of service activities. However, when placing remote phones behind 3rd-party firewalls, under certain conditions the UDP port range may need to be greatly restricted so that mapping rules can be created for each phone behind the firewall. See Chapter 17, **Remote Allworx Phones and Port Expanders**, for more information.		
SIP NAT Keep-alive Interval	Some NAT firewalls automatically time out and close connections to devices it protects. If a remote phone is behind such a firewall, then this setting prevents the timeout. Messages called keep-alive packets are sent from the phone to the Allworx server at the frequency specified. The value should be set to an interval that is shorter than the firewall timeout.	Yes	No
SIP Port	UDP port number used for the SIP protocol by the phone. Use the default value of 5060 unless the port expander is behind a 3rd-party firewall and the network requires a different value.	Yes	Yes
Handset Network Template	Select a Handset Network Profile Template to download to the handset.	Yes	No
Network Settings	Controls whether the handset will use the selected Network Template or if it should rely on the network settings entered on the phone.	Yes	No
Time Zone	Specify the time zone for the handset to compute the local time. Select Use Current Server Setting if the telephone is in the same time zone as the server. For a remote phone, you may want to use the time zone of its actual location.	Yes	No
Unannounced Transfer Mode	Choose whether unannounced (Blind) transfers are completed immediately after the phone number for the recipient is dialed or if the person initiating the transfer must hang up to complete the transfer. Choosing "Immediate" will result in unannounced (blind) transfer behavior that was standard in server software releases 7.3 and lower. Requiring hang-up permits the person initiating the transfer to hold on the line	Yes	No

	and speak to the recipient (i.e. perform an announced/attended transfer) before hanging up to complete the transfer.		
Checkbox Parameters		**Applies to:**	
		Allworx Handsets	**Allworx Reach Application**
Audible Dialing*	Enables hearing DTMF sounds on the handset or speaker when dialing the phone. When audible dialing is disabled, dialing operations are silent.	Yes	Yes
Auto On Hold*	Enable placing an active call on hold when another call comes in (with a free Call/Line Appearance PFK) when pressing the PFK for the new call. This avoids terminating the first call.	Yes	No
Auto Retrieve Calls*	Enable automatic retrieval of a hold call when the phone is on the hook by retrieving the phone from the hook. If disabled, the phone has an open line (if available) when retrieved from the hook.	Yes	No
Call Supervision	Enable monitoring of the handset to by another handset that has a Call Supervision PFK.	Yes	No
Call Timer Display*	Enables the phone LCD displays call duration timers.	Yes	No
Caller ID Display	Enables the phone to display any caller ID information during the call	Yes	No
Configuration Menu	Enable the phone station operator to access the station configuration menu. This is useful for securing phones located in common areas.	Yes	No
DTMF Playout	Enable sending DTMF digits during an active call.	Yes	Yes
Intercom Auto Answer*	Enable manually answering an incoming intercom call, like a regular phone call. Otherwise, intercom calls automatically answer with a live microphone after the alerting tone.	Yes	Yes
Keypad Dialing	Enable initiating or transferring a call via the keypad. This does not prevent the keypad from functioning during an active call. It prevents the use of the keypad to initiate any functions directly with the Allworx server (for example: dial number, Call Park, etc.).	Yes	No

Line Appearance(s) Use Dial Plan	Enable dialing a phone number when the phone does not display the selected Line Appearance PFK, is not recorded in the phone call history, and is not available for redial. If the CO lines on the system do not follow the North American Numbering Plan (including if the lines connects to another PBX), the user may want this feature disabled. The use of this feature requires the server's dial plan to be configured (see Chapter 14, Dialing Rules and Service Groups).	Yes	No
Off Hook Auto Answer*	Enable answering any new call when it goes off hook.	Yes	No
Off Hook Ringing*	Enable the phone to ring if there is an active, incoming call. However when this checkbox is disabled, the phone station will not ring if the user is already on an active call. The appearance LED indicators and the display operation are not affected.	Yes	Yes
On Hook Dialing*	Enables dialing a number on the keypad without picking up the handset or hitting the speaker phone button. When the phone is on hook and a digit is dialed on the keypad, the phone will automatically go into speakerphone mode.	Yes	No
Quick Transfer	Enable one-touch call transfers using BLF and Speed Dial PFKs. If disabled, pressing a BLF key during an existing call will terminate the original call as was standard in server software releases 7.3 and lower.	Yes	No
SNMP	Enable using the SNMP agent on the handset by network management tools.	Yes	No
Visual on Call*	Enables lighting the handset's Visual Ring Indicator when the handset is off hook.	Yes	No
Visual Ringing*	Enable lighting the Visual Ring Indicator when the phone has an incoming call. If disabled, only audible ringing is heard, if the feature is enabled.	Yes	No
* indicates that the setting can be overridden from within the on-handset configuration menus.			

11.4.1 Adding Handset Preference Group Options to Handset Templates

A Handset Template is a combination of a Programmable Function Key (PFK) setup and Handset Preference Group options. When a new phone is added, the "Active" Handset Template for its model (9212, 9224, etc.) is automatically applied.

To incorporate a Handset Preference Group into a new Handset Template:

1. Navigate to **Phone System** > **Handsets** > **View** of an existing handset. The View Configuration page displays.

2. Locate the Handset Preference Group, click the **Modify** link to choose a Handset Preference Group from the drop-down menu, and click **Update**.

3. Locate the Programmable Functions Keys section, click the **Modify** link to configure the PFKs, and click **Update**.

4. Click **Save** in the Template Options section, enter a new name in the description field, and click **OK**. Refer to Handset Templates, on page 89 for more information on creating and using Handset Templates.

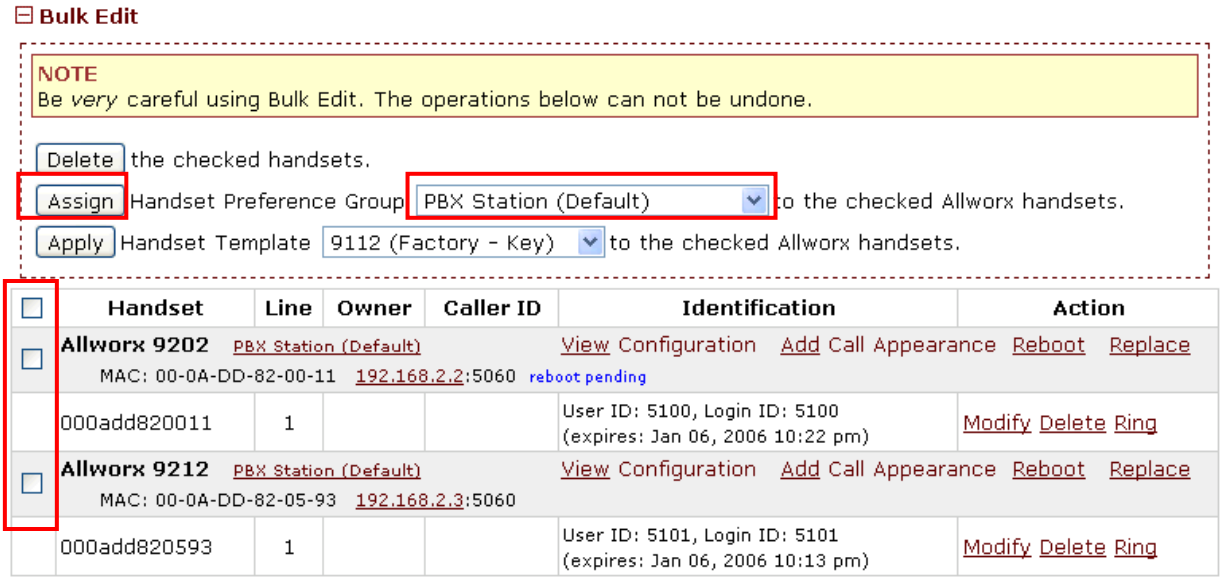
11.4.2 Assigning Handsets to Handset Preference Groups

Handsets can be assigned to Handset Preference Groups in several different ways. When new handsets are added, they are automatically assigned to the Handset Preference Group in the active Handset Template. Therefore, if the factory default phone options are not appropriate for the site, save time by creating a custom Handset Preference Group and incorporating it into a new Active phone template before adding the site's handsets.

When using the Bulk Edit controls on the Handsets page, assign multiple handsets to Handset Preference Groups at once:

1. Navigate to **Phone Systems** > **Handsets**. The Handset information page displays.

2. Go to the SIP Handsets section, and click the **+** next to Bulk Edit. The Bulk Edit options display on the page.


Bulk Edit
NOTE
Be very careful using Bulk Edit. The operations below can not be undone.
Delete the checked handsets.
Assign Handset Preference Group PBX Station (Default) to the checked Allworx handsets.
Apply Handset Template 9112 (Factory - Key) to the checked Allworx handsets.
Handset
Line
Owner
Caller ID
Identification
Action
Allworx 9202 PBX Station (Default)
View Configuration Add Call Appearance Reboot Replace
MAC: 00-0A-DD-82-00-11 192.168.2.2:5060 reboot pending
000add820011
1
User ID: 5100, Login ID: 5100
(expires: Jan 06, 2006 10:22 pm)
Modify Delete Ring
Allworx 9212 PBX Station (Default)
View Configuration Add Call Appearance Reboot Replace
MAC: 00-0A-DD-82-05-93 192.168.2.3:5060
000add820593
1
User ID: 5101, Login ID: 5101
(expires: Jan 06, 2006 10:13 pm)
Modify Delete Ring

3. Check the boxes for the handsets to be re-assigned.
4. Select the desired Handset Preference Group from the drop-down menu.
5. Click **Assign**, and then click **Confirm** to complete the assignment.

To add Handsets manually to Handset Preference Groups:

Option 1:

1. Navigate to **Phone Systems** > **Handsets**. The Handset information page displays.
2. Go to the SIP Handset section, select a handset and user, and click the **View Configuration** link.
3. Go to the Handset Preference Group and click the **Modify** link.
4. Select a Handset Preference Group from the drop-down menu.
5. Click **Update**. The settings page for the handset and user displays.
6. Navigate to **Phone Systems** > **Handsets** to get back to the Handset information page.

Option 2:

1. Navigate to **Phone Systems** > **Handsets**. The Handset information page displays.

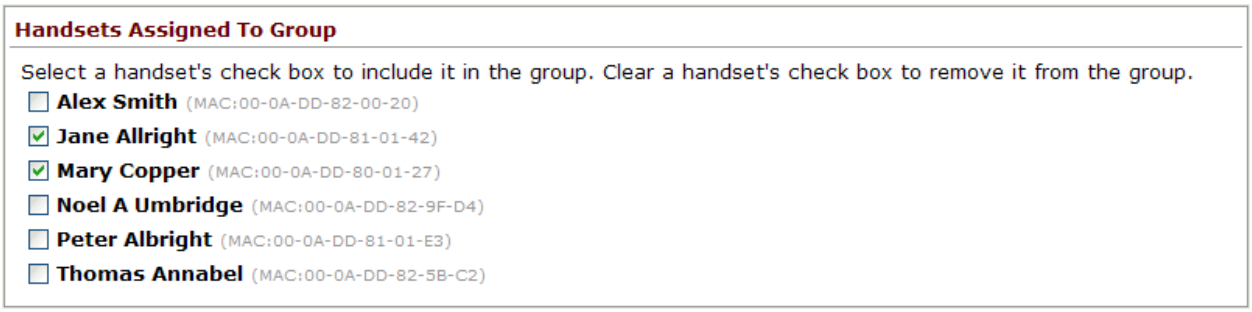
2. Go to the Handset Preference Groups section, select a a Handset Preference Group, and click the View link. The page displays the specific Handset Preference Group settings.

3. Go to the Handset Assigned To Group and click the **Modify** link. The assignment group page displays to view, add, or remove handsets from a group.

4. Select or deselect the user check boxes to add or remove the user from the Handset Preference Group. When removing a handset, it automatically moves to the server's PBX Station or Key System Station default group.

5. Click **Update** to save the changes. The settings page for the Handset Preference Group displays.

6. Navigate to **Phone Systems** > **Handsets** to get back to the Handset information page.


Handsets Assigned To Group
Select a handset's check box to include it in the group. Clear a handset's check box to remove it from the group.
Alex Smith (MAC:00-0A-DD-82-00-20)
Jane Allright (MAC:00-0A-DD-81-01-42)
Mary Copper (MAC:00-0A-DD-80-01-27)
Noel A Umbridge (MAC:00-0A-DD-82-9F-D4)
Peter Albright (MAC:00-0A-DD-81-01-E3)
Thomas Annabel (MAC:00-0A-DD-82-5B-C2)

11.4.3 Deleting Handset Preference Groups

The default groups and groups with assigned handsets cannot be deleted. Verify there are no handsets in the groups before deleting the group.

1. Navigate to **Phone Systems** > **Handsets**. The Handset information page displays.

2. Go to the Handset Preference Groups section, and select a Handset Preference Group.

   a. If the **Delete** link is available, proceed to the next step.

   b. If the Delete link is unavailable:

   - Click the **View** link, and go to the Handsets Assigned To Group section.
   - Click the **Modify** link, and deselect all the associated handsets.
   - Click the **Update** button, and restart this procedure.

3. Click the **Delete** link. This removes Handset Preference Group from the list of options.

11.5 Programmable Function Keys (PFKs)

11.5.1 Configuring phone PFKs

To configure PFKs on a phone:

1. Navigate to **Phone Systems** > **Handsets** and locate the handset that needs configuration.

2. Click the **View Configuration** link in the handset row. The Configuration page displays for the specific handset.

3. Go to the Programmable Function Keys section, and click the **Modify** link. The Programmable Function Keys page displays. There is a numbered row in the table corresponding to the individual PFK on the phone.

Note: For handsets with more than 12 PFK buttons or Tx Expander the user can assign options to more than 1 column of PFKs . There are links for the Left/Right sets of PFK buttons for the handsets and the Tx Expander.

4. Click the drop-down menu next to the key number, and select an available option for each PFK.

Option	Description
ACD Appearance	Services calls in ACD queues. Users log in and out of ACD queues with this PFK. When logged in, the user can receive and answer calls from ACD queues. Logged in agents can temporarily stop ACD calls from being routed to them by pressing the PFK. The PFK will flash red when it is in this state. Pressing the PFK again will permit calls to be routed to the agent.
Busy Lamp Field (BLF)	Monitors and dials another phone. The other phone is specified when setting up the BLF function. When the PFK is pressed, the behavior of this function is dependent upon the Station Mode selection. When Station Mode is set to PBX Behavior, the extension of the owner of the designated phone is dialed. When Station Mode is set to Key System Behavior, an intercom connection is made to the designated phone. Note: The Station Mode is a selected under the Phone Options page of each handset's View Configuration page.
Call Appearance	Maps to one of the Call Appearances available on the phone. This enables placing or receiving calls. Additionally: • Recalls that a phone can have multiple Call Appearances. This enables each Call Appearance to be distinctly used in call routing and for those calls to be managed independently and concurrently on the same phone. • Mapping more than one PFK to the same Call Appearance allows multiple calls to that Call Appearance to be active at the

	same time. The Call Appearance will not appear busy to the call route until all the PFK's defined for that Call Appearance are in use. This is similar to call waiting except the PFK's are used to alert and select a new call. Configuration Example: Busy Receptionist Requirements: Susan works as a receptionist at a busy office. She gets many phone calls each hour. She wants to be able to answer each call while minimizing the possibility of any caller getting a busy signal. Phone Configuration: She has one Call Appearance defined on her phone. She sets up 8 of her phone's PFK's to map to her phone's Call Appearance. (She wants to use the remaining PFK's for other functions). Discussion: When the first phone call comes in, her phone will ring and the first of the Call Appearance PFK's will blink green. While talking with the first caller, a second call comes in. Her phone rings again and the second Call Appearance PFK blinks green. She puts the first caller on hold by pressing the Hold button on her phone and picks up the second caller by pressing the second Call Appearance PFK. She continues to put callers on hold and answer new calls just as described. She terminates calls by switching to another Call Appearance PFK
Call Monitor	Map to one of the 10 Call Monitors in the system. A Call Monitor allows live call answering of any outside line or call route that is mapped through the associated Call Monitor. See Chapter 27, Call Monitors, for more information.
Call Supervision	Enables supervisors to train agents by listening in on their calls. In addition, supervisors can participate in calls by "barging in" and speaking to both parties. See Chapter 24, Call Supervision, for more information.
Emergency Alert	Receive audible and visual alerts whenever an emergency call is made from any local or remote handset on the system. See Chapter 23, Emergency Support.
Function	Perform one of a specified set of functions: • Centrex Flash – Allows transferring external calls to external numbers without tying up CO lines connected to your Allworx server. • Headset – Turns the Headset (if one is plugged in) on and off. If a headset is plugged in and the handset is off-hook, then this button toggles the audio between the headset and the handset. Note: If a Headset PFK is not defined, the phone's speaker button will be used to operate the headset. • Info – Get information regarding the other buttons on your phone. • Park – Enables programming a PFK to perform the Park operation with a press of a button. After defining a Park PFK, the user can only use the Hold button for the dedicated hold function and not the parking operation. • Personal Speed Dial – Dials a number programmed directly on

	the phone. The mapping of the Personal Speed Dial Numbers defined in the handset to the PFK is as follows. The uppermost Personal Speed Dial PFK is associated to the lowest Speed Dial entry number on the handset. • Redial – Redials the last dialed number. Unless the Line Appearance(s) Use of Dial Plan phone option is enabled, only Call Appearance-dialed calls can be redialed.
Hot Desk	Enables users to log into shared phones, receive their calls on that phone, and place calls with their caller ID. Users can initiate the login using a Hot Desk PFK or by selecting the Hot Desk Login option from the phone's Config menu. Use the Hot Desk PFK for logging into the phone that has the PFK. The PFK is normally solid red but goes off when a user logs in. Users can still log into phones that do not have the PFK using the phones Config menu. Note: The configured PFKs for phones do not change when a new user logs in. The Hot Desk PFK and all other PFKs remain as originally configured for the phone
Line Appearance	Monitors the status of an outside line, answers incoming calls on that line, and selects the line for outbound calls. When setting up this function for this PFK, the user specifies the line. To enable outside lines available for selection: • Navigate to **Phone System** > **Outside Lines** and go to the Analog (CO) Lines section. • Select the Analog (CO) Line, and click **Modify**. • Go to the Outside Line section, and check the **Enable Line Appearance** check box. • Click **Update** to return to the Outside Lines page. Unique Allworx Functionality: Allworx has enhanced key-system capabilities relative to SIP devices and Digital Lines. Any SIP proxy, SIP gateway, or Digital Line (T1) bearer channel can be made available as Line Appearance selections when they are enabled on their respective configuration pages. Through this manner, the Allworx system can present a common key system use model to all external voice circuit facilities including VoIP trunks going to an ITSP
Messages	Automatically monitors the status of the designated user's Message Center voicemail inbox and when pressed, automatically accesses the inbox. The PFK LED turns red when there is a new message in the monitored inbox. Specify the user whose inbox is to be monitored when setting up the PFK.
Not Used	No action. Select this choice to disable a previously defined PFK.
Parking Orbit	Assign to any of the first nine Parking Orbits. The PFK lights if a parking call in orbit. Pressing the PFK retrieves the parked call in that orbit. Do not use the Parking Orbit PFKs to pick up parked calls in Parking Orbits beyond the first nine. Parking Orbit PFKs do not function if the server is part of a Multi-site network and configured to enable other sites to retrieve its parked calls. See Chapter 28, Parking Orbits, for more information.

Park Set Monitor	Enable a single PFK to monitor a configurable set of parking orbits. The PFK lights if parking calls in any of the set of orbits. Pressing the PFK displays a list of parked calls in the orbit along with Caller ID and other information. Users can retrieve one of the parked calls using the UP/DOWN arrow keys and the SELECT button. For example, users can use a single PFK to monitor all local park orbits and a single indicator for any call placed in a parking orbit. This also enables users to monitor the local parking orbits of a remote server in a multi-site environment.
Push to Talk	Provide a one-way, walkie-talkie-like capability. The configured PFK accesses a specific handset. The user can speak to the user of the target handset by holding the PFK down and speaking. If the user of the target handset wishes to respond, they must place a regular call back to the originator.
Queue Alarm	Map to one of the 10 Call Queues in the system. It notifies the user of the queue's activity levels (number of calls in the queue and/or longest wait time). It can be configured to include an audible alarm with the queue's status displayed on the phone's LCD.
Queue Appearance	Map to one of the 10 Call Queues in the system. It automatically monitors the status of a Call Queue and can be used to answer calls that are in the queue.
Schedule	Display the Mode (Day or Night) of the configured Business Schedule. The LED is off when in Day mode and solid red when in Night mode. It can be configured to manually switch the current Mode and Greeting of the Schedule. See Chapter 25 Business Schedules for more information.
Shared Call Appearance	Enables handling a set of one or more PFKs by the system as a single appearance shared across multiple handsets. All handsets in the Shared Appearance have common access to calls and call operations within the group of handsets. Choosing this PFK assigns consecutive PFKs, one for each Shared Call Appearance line. If there are not enough consecutive PFKs available, the PFK assignment fails and an error message displays. If the Shared Call Appearance PFK assignment would overwrite existing PFKs, the system displays an error message and enables the Allworx Server Administrator to cancel the operation. Once a Shared Call Appearance's PFKs display consecutively on the PFK configuration page, the Allworx Server Administrator can move the assignments to different PFKs limited only by the constraints within the particular handset model. This feature is unavailable on Allworx 9202E and Reach handsets.
Speed Dial	Automatically dials an extension. The Allworx Server Administrator specifies the extension when setting up the Speed Dial function for this PFK.

5. Go to the next column and click the **define** link. The Programmable Function Key window opens.

The Emergency Alert and Hot Desk assignments do not have the define link. There are no further options to choose.

The Schedule assignment has a **change** link. Use this link to update the additional options associated with the Schedule PFK.

6. Use the drop-down menus to update the selection, and click **Done**.

7. Repeat for each PFK, as necessary.

8. Click **Update**, the handset configuration screen displays.

9. Go to **Phone Systems** > **Handsets** to return to the handset page.

11.6 Enhanced PFK Administration

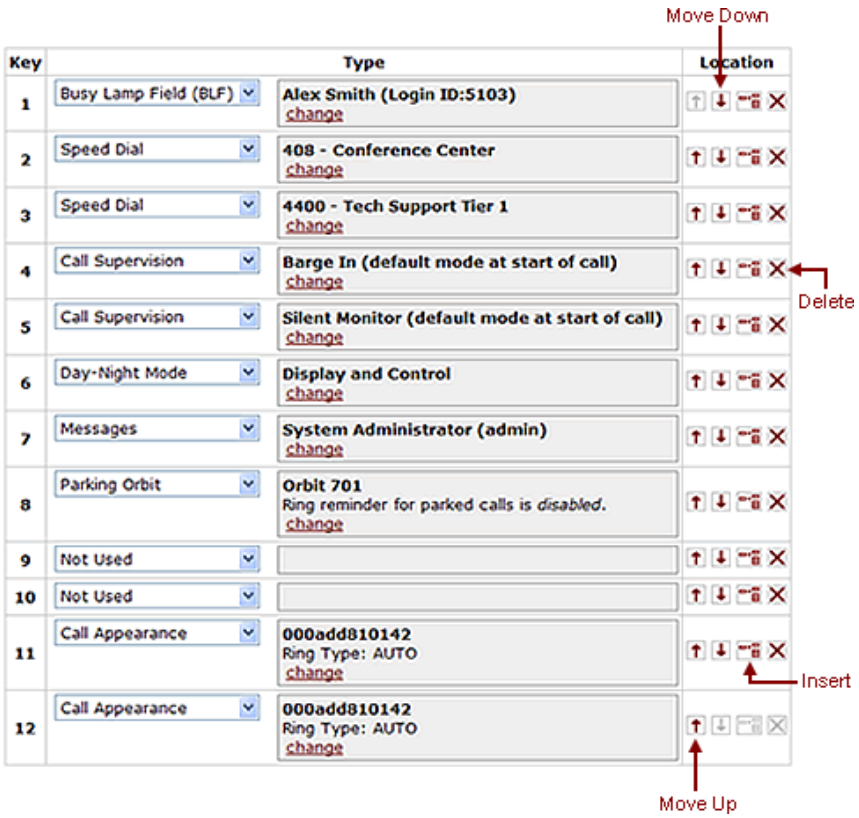
With the Allworx 9224 phone and Allworx Tx 92/24 Expander, it is possible to have up to 96 PFKs on a single phone. Enhanced PFK Administration provides a System Administrator with tools and flexibility in managing the PFKs of all Allworx phones.

11.6.1 Moving Up and Moving Down

On each handset's View Configuration page, every PFK has a Move Up and Move Down button. These buttons enable the Administrator to swap a PFK definition with the PFK above (Move Up) or below (Move Down) the selected PFK.

11.6.2 PFK Insert and Delete

Delete or Insert buttons display next to each PFK. Clicking the delete icon eliminates the PFK and shifts all PFK definitions below it up by one location. Because of the shift, PFK definition #1 in each bank of 12 shifts "up" to the bottom (to position number #12) of the bank to its left. The last PFK definition on the station becomes Not Used (position #12 of the last bank). Clicking the insert icon next to a PFK shifts all PFK definitions below it down by one position. Because of the shift, PFK definition #12 in each bank of PFKs shifts "down" to the top (to position number #1) of the bank to its right. If the last PFK on the station (handset or Expander) was in use, its definition will "drop off" the end of the list and will no longer be configured.



11.7 Call Assistant Appearances

The Call Assistant Appearance requires installation of the Call Assistant software application.

The Call Assistant Appearance settings extend the number of the features available in Programmable Function Keys by creating virtual keys within the Call Assistant software application. The additional virtual appearances are available only when the Call Assistant application is connected to an Allworx IP phone. However, when connected, this has the practical implication of having many additional PFKs, for these features, beyond the physical keys available on the actual phone.

Call Assistant Appearances have the following PFK options:

- Call Appearance
- Line Appearance
- Shared Call Appearances
- Queue Appearance
- Call Monitor

See the above section on PFK Function Selections for details on each of these features. The handset will ring when any of these appearances ring. See the Call Assistant Quick Reference Guide for further details. Enable the above feature by check the appropriate field and modify the parameters, if needed.

To modify the the Call Assistant Appearance configuration:

1. Navigate to **Phone System** > **Handsets** and click the View Configuration link on the specific handset.

2. Go to the Call Assistant Appearances section, and select the **Modify** link. This opens the Call Assistant Appearances configuration page. These options work identically to the corresponding appearance types described previously on physical PFK buttons.

3. Click **Update** to update the changes.

4. Navigate to **Phone System** > **Handsets** to return to the handset configuration page.

11.8 Handset Templates

Configuring many phones can be time consuming and error prone. To improve this, the Allworx server provides templates that store a phone configuration. The system provides a factory default template for each phone type. The System Administrator can create customer-specific templates.

The list of available templates is in the Handset Configuration Templates section of the **Phone System** > **Handsets** page.

Handset Configuration Templates

Model	Description	Action
Allworx 9112	9112 (Factory - Key)	View Activate
Allworx 9112	9112 (Factory - PBX) *[ACTIVE]*	View
Allworx 9102	9102 (Factory) *[ACTIVE]*	View
Allworx 9212	9212 (Factory - Key)	View Activate
Allworx 9212	9212 (Factory - PBX) *[ACTIVE]*	View
Allworx 9202	9202 (Factory) *[ACTIVE]*	View
Allworx 9224	9224 (Factory - Key)	View Activate
Allworx 9224	9224 (Factory - PBX) *[ACTIVE]*	View

11.8.1 Default Handset Templates

The current default template for each phone type lists as [ACTIVE] in the list of Handset Configuration Templates. To make another template the default, click its Activate link. The current active templates are used for configuring phones during plug-n-play.

11.8.2 Viewing a Handset Template's Configuration

To view a template's phone configuration, click the **View** link in the Action column in the list of Handset Configuration Templates.

11.8.3 Creating a New Handset Template

New templates can be created from any phone's configuration.

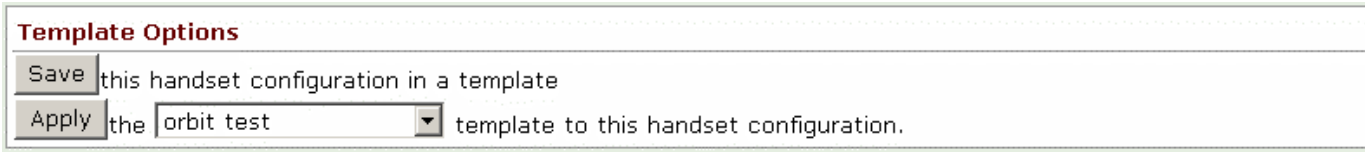
To create a new template:

1. Navigate to **Phone System** > **Handsets** and click the **View Configuration** link on the specific handset.

2. Change the configuration according to the requirements for the new template. The template includes the PFK setup and the Handset Preference Group from the phone.

3. Click **Save** in the Template Options section, and enter a new description in the pop-up window. Click OK. This saves the template, and it is available in the list of Handset Configuration Templates for the specific handset.

4. Navigate to **Phone System** > **Handsets** to return to the handset configuration page.



11.8.4 Applying a Handset Template

To configure a template to multiple phones:

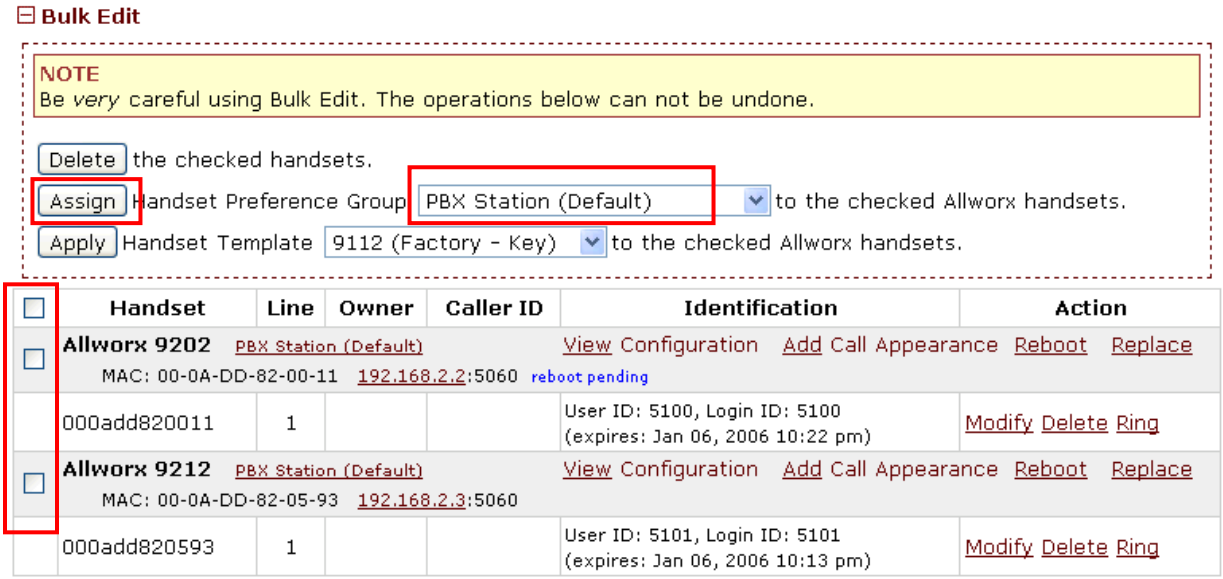
1. Navigate to **Phone System** > **Handsets**, and go to the SIP Handsets section.

2. Select **+** by Bulk Edit to assign multiple handsets to the Handset Preference Group at once. The Bulk Edit options are available.

3. Check the box in the left column for the phones to be changed.

4. Select the desired Handset Template in the template drop-down list.

5. Click **Apply**. Reboot the phones for the changes to take effect. The phones are now configured with the PFK setup and Handset Preference Group defined in the template.


Bulk Edit
NOTE
Be very careful using Bulk Edit. The operations below can not be undone.
Delete the checked handsets.
Assign Handset Preference Group PBX Station (Default) to the checked Allworx handsets.
Apply Handset Template 9112 (Factory - Key) to the checked Allworx handsets.
Handset
Line
Owner
Caller ID
Identification
Action
Allworx 9202 PBX Station (Default)
MAC: 00-0A-DD-82-00-11 192.168.2.2:5060 reboot pending
View Configuration Add Call Appearance Reboot Replace
000add820011
1
User ID: 5100, Login ID: 5100
(expires: Jan 06, 2006 10:22 pm)
Modify Delete Ring
Allworx 9212 PBX Station (Default)
MAC: 00-0A-DD-82-05-93 192.168.2.3:5060
View Configuration Add Call Appearance Reboot Replace
000add820593
1
User ID: 5101, Login ID: 5101
(expires: Jan 06, 2006 10:13 pm)
Modify Delete Ring

To configure a template to single phone:

1. Navigate to **Phone System** > **Handsets**, and go to the SIP Handsets section.

2. Go to the line for the specific phone and click the **View Configuration** link.

3. Go to the Template Options section, and select the desired template in the drop-down list.

   Click **Apply**. Reboot the phone for the changes to take effect. This updates the phone configuration with the PFK setup and Handset Preference Group defined in the template.

11.8.5 Deleting a Handset Template

Note: The system does not enable deleting the factory-provided templates.

To delete a custom template:

1. Navigate to **Phone System** > **Handsets**.

2. Go to the Handset Configuration Templates section and click the **Delete** link.

11.8.6 Modifying a Handset Template

The Allworx Server Administrator can save, apply, and delete Handset templates but not directly modify the Handset templates.

To modify a handset template:

1. Navigate to **Phone System** > **Handsets**, and go to the Handset Configuration Templates section.

2. Locate the template you want to modify, and click **Delete**.

3. Go to the SIP Handsets section, and locate the template needing modification. Click **View Configuration**.

4. **Update** the configuration.

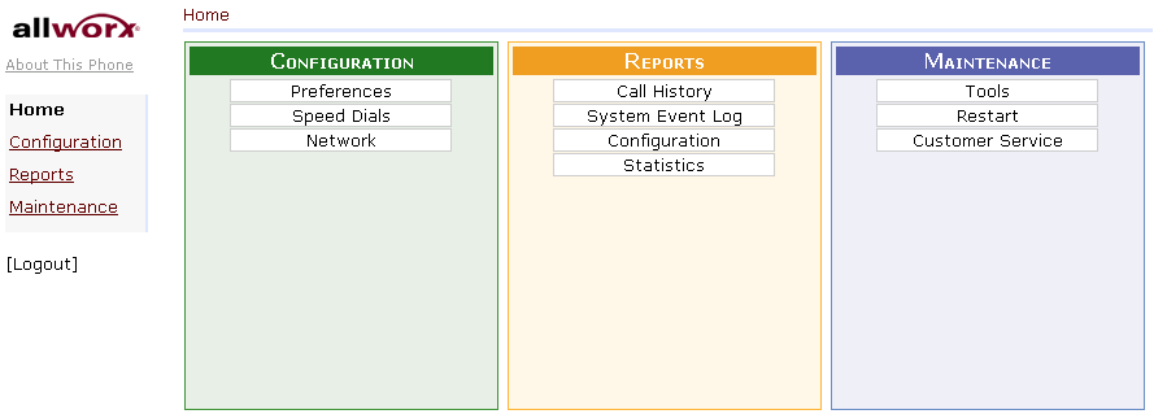
5. Click the **Save** button in the Template Options section, and enter a new description in the pop-up window. Click OK. This saves the template, and it is available in the list of Handset Configuration Templates for the specific handset.

6. Navigate to **Phone System** > **Handsets** to return to the handset configuration page.

11.9 Phone Web Administration

Access each handset through a web interface:

- View stored configuration information of the handset
- Modify the handset's configuration and personal speed dials
- View information (event log, call history, phone configuration parameters)



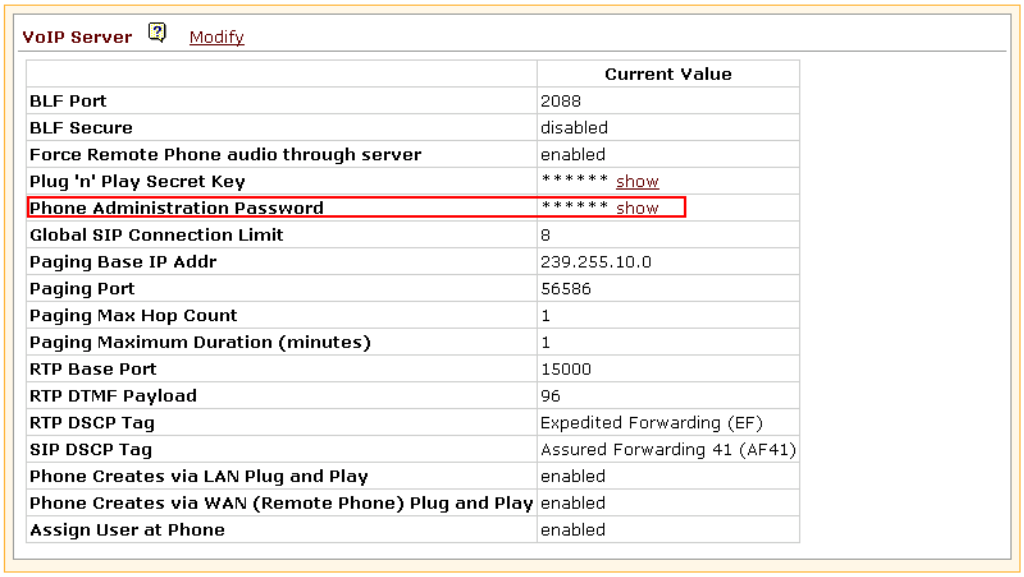
The Phone Admin page has the same look and feel as the server Admin page. However, the password used to access the phone admin page is NOT the same.

NOTE: Users receive an error message when trying to use Allworx as the password. The system does not acknowledge the password - Allworx, choose another password.

To view the Phone Admin page password:

1. Navigate to **Servers** > **VoIP** page.

2. Click the **show** link next to the password. Click the **Modify** link to change the password.



VoIP Server Modify

	Current Value
BLF Port	2088
BLF Secure	disabled
Force Remote Phone audio through server	enabled
Plug 'n' Play Secret Key	****** show
Phone Administration Password	****** show
Global SIP Connection Limit	8
Paging Base IP Addr	239.255.10.0
Paging Port	56586
Paging Max Hop Count	1
Paging Maximum Duration (minutes)	1
RTP Base Port	15000
RTP DTMF Payload	96
RTP DSCP Tag	Expedited Forwarding (EF)
SIP DSCP Tag	Assured Forwarding 41 (AF41)
Phone Creates via LAN Plug and Play	enabled
Phone Creates via WAN (Remote Phone) Plug and Play	enabled
Assign User at Phone	enabled

There are two ways to access the administration page of an Allworx handset.

- From the Server Admin page, navigate to the **Phone System** > **Handsets** page and then click the **handset IP address** link.
- From a browser, enter the IP address of the handset. Find the IP address using the handset soft keys: CONFIG > Current Status > Info.

12 Shared Call Appearance

The Shared Call Appearance enables the sharing of a set of one or more PFKs across multiple handsets. All handsets in a Shared Appearance have common access to calls within the group of handsets. For example, an incoming call can ring on all handsets with the appearance, one user can answer and place the call on hold, and then another user can retrieve the call.

There are two use cases for shared call appearances:

- **Call Group** – Users with similar business needs or tasks assigned to a group can answer any calls to the group's shared appearance. A handset can place the call on hold and another handset can retrieve the call.
- **Executive/Assistant Arrangement** – An appearance exists on the handsets of both an executive and assistant. The assistant may answer the calls to the executive and place them on hold for the executive to pick up. The assistant always sees the state of all calls on the executive's handset.

Note: 9202E and Reach handsets do not support the use of Shared Call Appearances.

Shared Call Appearances support three distinct types of hold behavior:

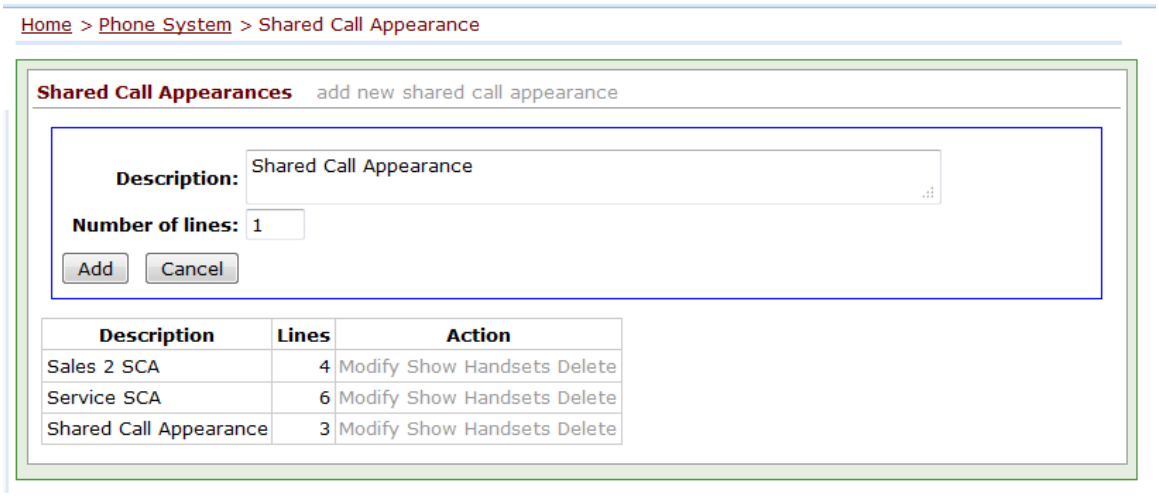
- **Shared Hold**, any handset using the Shared Call Appearance can retrieve the call on hold.
- **Privacy Hold**, only the handset that placed the call on hold can retrieve the call.
- **Bridged Hold**, the handset that placed the call on hold and one other handset that has the same Shared Call Appearance can retrieve the call. Users initiate a Bridged Hold by placing an Intercom call to the second party while the original call is still active.

12.1 Configuring Shared Call Appearances

After creating the Shared Call Appearance, each has all the attributes assigned to a normal Call Appearance (Caller ID, hold music, etc.) Outbound Caller ID is common for all outbound calls on a given Shared Call Appearance. If deleting a Shared Call Appearance, the server removes it from all handsets.

To create a Shared Call Appearance:

1. Navigate to **Phone System** > **Shared Appearances**.
2. Click the **add new shared call appearance** link. The Shared Call Appearances dialog box displays.



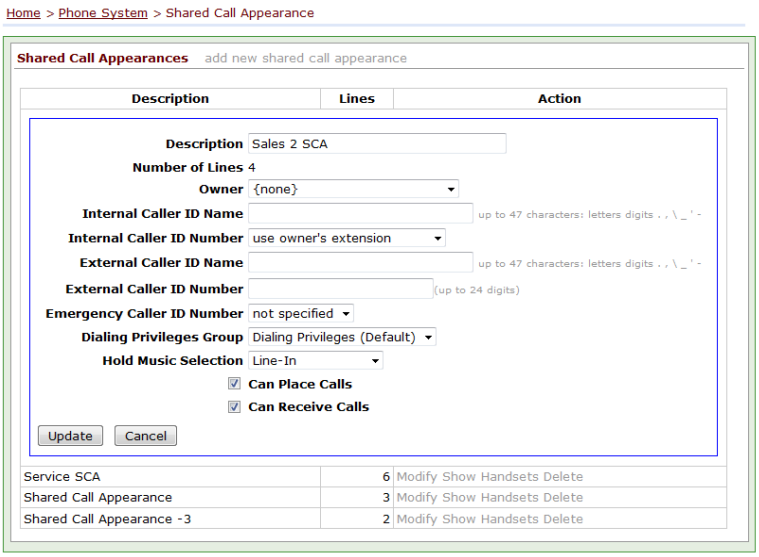
3. Update the Description field, and then update the Number of Lines field. The Number of Lines field is the number of PFKS that are assigned to the handsets.

4. Click **Add** to save the new Shared Appearance.

To Modify Shared Call Appearances:

1. Navigate to **Phone System** > **Shared Appearances**.

2. Locate the Shared Call Appearance description in the table and click the **Modify** link. The Shared Call Appearances dialog box displays.



3. Update the Description field, and then update the Number of lines field (this is number of PFKs)

Note: The Number of Lines is not available for change as this would affect the number of PFKs on all phones, rendering some phones unable to support the Shared Call Appearance feature.

4. Click **Update** to save changes.

To see associated handsets:

1. Navigate to **Phone System** > **Shared Appearance**.
2. Locate the Shared Call Appearances description, and click the associated **Show Handsets** link.
3. Click the **Close** button when complete.

To delete a Shared Call Appearance:

1. Navigate to **Phone System** > **Shared Appearance**.
2. Locate the Shared Call Appearances description in the table and click the **Delete** link. A confirmation box displays.
3. Click **OK** to delete the Shared Call Appearance. The system automatically deletes the SCA's PFKs from all handsets that shared it. Reboot all affected phones to remove the PFKs.

12.2 Shared Call Appearance Programmable Function Keys (PFKs)

To access the Shared Call Appearance PFK:

1. Navigate to **Phone System** > **Handsets.** The handset information page displays.
2. Click **View configuration**. Go to the Handset Preference Groups section, and select a Handset Preference Group.
3. Select the Shared Call Appearance type in the drop-down list.

   When assigning a Shared Call Appearance PFK to a handset, the system assigns consecutive PFKs, one for each Shared Call Appearance line. If there are not enough consecutive PFKs available, the PFK assignment fails and an error message displays. If the Shared Call Appearance PFK assignment would overwrite existing PFKs, the system displays an error message and enables the Allworx Server Administrator to cancel the operation.

   After the system allocates consecutive PFKs for all the lines in the Shared Appearance, the Allworx Server Administrator canmove the lines to other PFKs, limited only by the constraints within the particular handset model.

For more information on configuring PFKs, go to Programmable Function Keys (PFKs) on page 83.

If replacing a phone that is using a Shared Call Appearance, the replacement phone automatically shares the Shared Call Appearance - if the new handset has enough PFKs available to accommodate all Shared Call Appearance lines. If the new handset does not have enough PFKs available, the system notifies the user, and the handset replacement completes without adding the Shared Call Appearance to the new handset.

12.3 Call Routes

Each defined Shared Call Appearance is selectable as a destination in any extension call route.

For more information on setting up extension call routes, see Chapter 18.2 Basic Routing. In multi-site networks, Allworx Server Administrators can map defined Shared Call Appearances on one site to other sites to use as destinations in the other sites' call routes.

12.4 Phone LED Indicators

LED Color	State	Description
Off	Idle	No calls on the Shared Call Appearance line. Users can seize the line.
Solid Green	In Use locally	The handset "owns" the Shared Call Appearance line. No other users can access the line.
Fast Flashing Green	Ringing	An inbound call to the Shared Call Appearance is ringing. All handsets indicate ringing on the same Shared Call Appearance line.
Slow Flashing Green	On-hold	Active call is on Shared Hold. Any Shared Call Appearance participant can retrieve the call.
Slow Alternating Green and Red	Privacy Hold	Active call is on Private Hold. Only the Shared Call Appearance participant that placed the call on hold can retrieve the Shared Call Appearance call.
Solid Red	In Use remotely	The Shared Call Appearance line is in-use by a handset. Press the INFO soft key, and the PFK displays who own the Shared Call Appearance line.

12.5 Outbound Call

To seize a line locally for outbound calls, the user presses an idle Shared Call Appearance PFK and the PFK LED changes to solid green. The user hears a dial tone, and then the user can make an outbound call. The PFK for that line is solid red and unavailable on all other handsets that share the Shared Call Appearance.

12.6 Inbound Calls

A ringing inbound call on a Shared Call Appearance causes the PFK to flash fast green on all handsets sharing the Shared Call Appearance. The user of any phone with that Shared Call Appearance can answer the inbound call.

12.7 Ringing Call Pickup

Handsets that do not share the Shared Call Appearance can pick up ringing calls on a Shared Call Appearance line using the call pickup prefix (default: 7 + extension). Once another call appearance picks up a call, the call is no longer on that Shared Call Appearance and the Shared Call Appearance line returns to its idle state.

If a phone not in the Shared Call Appearance group picks up a call, that call is no longer a part of that Shared Call Appearance. For example, if a non- Shared Call Appearance phone picks up the call and places it on hold, it is a "normal" hold and not one of the Shared Call Appearance hold types.

12.8 Do Not Disturb (DND)

Individual users of phones that are using a Shared Call Appearance can avoid having their handset ring Shared Call Appearance calls to their phone using the DND button. When a phone is in DND mode and a Shared Call Appearance call rings in, it is possible to answer the call on a handset that is sharing the Shared Call Appearance - as long as the call is ringing.

12.9 Silence

Silence incoming calls on a Shared Call Appearance using the Silence soft key on individual phones. The call continues to ring on all other handsets sharing the Shared Call Appearance. Answer silenced calls on any handset that is sharing the Shared Call Appearance.

12.10 Ignore

Ignore incoming calls to a Shared Call Appearance using the Ignore soft key on individual phones. The call shall continue to ring on all other handsets that are sharing the Shared Call Appearance. Answer ignored calls on any handset that is sharing the Shared Call Appearance.

12.11 Active Calls

An answered, active inbound call on an Shared Call Appearance line (or connecting an outbound call), renders the line unavailable to all other phones using the Shared Call.

While there is an active call on a Shared Call Appearance, other users of the Shared Call Appearance can view the Caller ID information of each party by pressing the phone INFO button, and then pressing the red PFK of the in use Shared Call Appearance line.

12.12 Shared Hold

To place the active Shared Call Appearance phone call on hold, press the HOLD key. The LED flashes green slowly on all phones that share the Shared Call Appearance; this includes the phone used to place the call on hold. Any handset that shares the Shared Call Appearance can resume the call. If no one picks up the held call, the handset that placed the call on hold receives a notification per their individual HOLD reminder settings.

12.13 Privacy Hold

A call on Privacy Hold is only retrievable by the handset that places the call on hold. To place the call on "privacy" hold, press the HOLD button twice quickly. The handset that places the call on privacy hold has a slow, alternating green and red LED. All other phones that are a part of the Shared Call Appearance have a solid red LED for the privately held Shared Call Appearance line. If the user does not pick up the held call, the phone receives a notification per the phone's HOLD reminder settings.

Note: The Shared Call Appearance Private Hold and Attended Transfer of Shared Call Appearance calls are not available in the Call Assistant or the TSP driver.

12.14 Bridged Hold

To place a Shared Call Appearance call on hold so that it is retrievable by a second designated handset that is a part of the Shared Call Appearance, place an intercom call to the handset with the same Shared Call Appearance. This bridges the hold to the second handset automatically, and enables the second handset to resume the held call by selecting the flashing Shared Call Appearance PFK. If neither party resumes the held call, the handset that placed the call on hold receives a notification per the individual HOLD reminder settings.

12.15 Park

If a user parks a Shared Call Appearance call and the Park timeout setting for the system is set to ring back to the handset that parked the call, the parked call shall ring back to only the handset that parked it. It will not ring all handsets in the Shared Call Appearance. The Shared Call Appearance PFK light goes out and the call is no longer on the Shared Call Appearance.

12.16 Displaying Shared Call Appearance PFK Configuration Details

The phone Info button identifies Shared Call Appearance PFKs as a Shared Call Appearance. If there are no active calls, the Info button displays the Shared Call Appearance name and the number of lines. If there is call on the Shared Call Appearance, the Info button displays the name of the owner of the call, the extension/number they are on call with, and the number's caller id.

NOTE: Using the Call Forwarding option on a phone does not forward Shared Call Appearance calls.

13 Outside Lines

Allworx servers support placing and receiving calls over the following line types:

Line Type	6x/12	6x	24x	48x
POTS/CO	X	X	X	X
SIP Proxies	X	X	X	X
Allworx Px Expanders		X	X	X
SIP Gateways		X	X	X
T1/PRI			X	X
T1/CAS - T1/RBS			X	X
NFAS				X

13.1 Configuring CO Lines

1. Navigate to **Phone System** > **Outside Lines**. Go to the Analog (CO) Lines section.

2. Locate the Analog (CO) Line in the table, and click the corresponding **Modify** link. The New FXO Line dialog box displays.

3. Update the appropriate analog (CO) line options.

Outside Line	Description
Description	DNIS display on phones that receive calls on this line.
Enable Line Appearance	Enables configuring the handsets with Line Appearance PFKs for this line.
Default Language	Enables selecting a language for systems configured with multiple languages to use with Auto Attendant and/or Queue prompts for inbound callers.
Line has Caller ID Service	Enables displaying the Caller ID information.
Enable Echo Cancellation	Only disable at the request of Allworx Technical Support.
Optimize for short loops	Check for FXD/IADs less than 500 feet away, not typically selected.
Prefix Digits	Enter automatically dialed digits on the line prior to dialed digits by handsets placing outbound calls on this line.
CPC Disconnect timer	Default 350 milliseconds
Pre-dial delay	Typical 500 milliseconds
DTMF Duration	Typical 100 milliseconds

DTMF Gap	Typical 100 milliseconds
Select the attendant used to answer when calls received from this source are routed to an Auto Attendant.	Select the option from the drop-down list of options.
Calls received from this CO line go to:	• Extension • Auto Attendant • Voicemail for user

4. Click the **Update** button to save changes.

13.2 Fax Server Support

Allworx Systems provide the ability to send control information in the form of DTMF digits to devices connected to the servers FXS ports. An extension phone number and/or the dialed number (DNIS) along with using arbitrary DTMF characters to control the following devices:

- Analog FAX servers (e.g. Multi-Tech FaxFinder)
- External paging amplifiers
- External voicemail servers

The digits will be sent immediately after the device answers and before any audio from the calling source is available.

To add the device and configure which DTMF digits will be sent:

1. Navigate to **Phone System** > **Handsets** page. Select the New Analog Handset link for the port.

2. Add a description of the device.

3. Click **Add**. The New Analog Handset displays in the Analog Handsets section.

4. Select the **Modify** link for the device.

5. Go to the Handset Features section, and enter the DTMF digits to send into the Auto Answer DTMF String text box. These digits will be sent to the FXS device as soon as it answers the call. The following characters can be used:

   DTMF digits:

   - 0 – 9
   - A – D
   - *

- #

Timing controls:

- P generates a one second pause
- + increases the duration and gap of all DTMF tones by 50ms
- - decreases the duration and gap of all DTMF tones by 50ms

Variables:

- $xN sends the last N digits (0 for all digits) of the dialed extension
- $nN sends the last N digits (0 for all digits) of the DNIS number

6. For the device to receive incoming calls, an outside line must be routed to the port to which the device is attached. To route an outside line to the device:

   Create an extension that rings the port of the device.

   Route an outside line to the extension.

Note: For specific device setup instructions for the Multi-Tech FaxFinder, please refer to the application notes, located on the Allworx Partner Portal at http://www.allworxportal.com.

13.3 SIP Proxies and SIP Gateways

The Allworx servers support connectivity to external SIP-compliant devices such as Internet Telephony Service Provider (ITSP) servers and SIP gateways. The Allworx products interface with four different types of SIP devices based on how they interact with the Allworx system. SIP Gateways are not supported on 6x12 servers.

SIP Device	Description
SIP Proxy	Refers to a SIP Trunk, an external SIP service for routing calls. The SIP Proxy is accessed through the Internet or through the wide area network (WAN). To connect to a SIP proxy (or ITSP), it must be configured on the Allworx server. Application notes for configuring Allworx servers with approved ITSPs are available on the Allworx Partner Portal www.allworxportal.com.
SIP Gateway	An SIP-compatible device that extends the connectivity of the Allworx PBX. Examples are FXO, FXS or T1 expander gateways. Typically, SIP Gateways connect to the Allworx server via an Ethernet interface directly to the Allworx server LAN.
Remote Allworx Servers (Multi-Site)	An Allworx server at another site configured to behave as if it is part of the local system. The Allworx Server Administrator can configure the remote Allworx server to provide outside line services for the local server. See the Allworx Advanced Multi-site Setup Guide for information on configuring these services. The guide is available on the Allworx Partner Portal (www.allworxportal.com).

SIP Gateways and SIP Proxies are different but are configured in a very similar manner. Both types of devices are added to the system through the **Phone System** > **Outside Lines** page.

13.3.1 Configuration

SIP Proxies and SIP Gateways have configuration settings that are specific to using the ITSP or device. Refer to Allworx Server behind a 3rd-Party NAT Firewall on page 33 for additional information.

To configure a new SIP Gateway or SIP Proxy:

1. Navigate to **Phone System** > **Outside Lines** page.
2. Go to the appropriate section and click the link.
    a. SIP Gateways section: Click the **add new SIP Gateway** link. This opens the SIP Gateway dialog box to configure the parameters specifically for the ITSP service in use.
    b. SIP Proxies section: Click the **add new SIP Proxy** link. This opens the SIP Proxy dialog box to configure the parameters specifically for the ITSP service in use.
3. Update the parameters (see table below), and click **Add**.
4. Navigate to **Phone System** > **Outside Lines** to return to the Outside Lines page.

13.3.2 SIP Proxy and SIP Gateway Setting Details

Account Setting	Description
Description	Assign a name to the SIP Proxy. It can be the ITSP name or any name that is useful to the System Administrator.
User ID	The ITSP typically assigns this value. This ID is often the phone number for the account.
SIP Server	The DNS name or IP address of the proxy server you are connecting provided by the ITSP. The port number is usually 5060 but verify with the ITSP.
Outbound Proxy	DNS name or IP address of the outbound redirect server, if it differs from the SIP Server. In many cases, this is not required.
SIP Registration Required	Use if your SIP proxy server requires a SIP registration. The ITSP assigns the Login ID and Password. If the ITSP uses a registrar server that is different from the SIP proxy server, enter the DNS name or IP address of this server in the Registrar name field.
Caller ID Name	Name used for outbound calls. Some ITSPs may ignore this or refuse calls if set.

Caller ID Number	Number used for outbound calls. Some ITSPs may ignore this or refuse calls if set.
Maximum Active Calls	The Allworx server uses this number to limit the total number of the incoming and outgoing active calls with this SIP Proxy. This is useful for controlling the network bandwidth used, since Allworx assumes that the SIP proxy is not a LAN local service.
Number of Line Appearances	Defines the number of Line Appearances you would like defined for this Proxy so that Allworx will create a virtual set of phone lines that mimic real physical analog phone lines on this service. This is unique to Allworx and enables using ITSP services in a conventional key system manner. Typically, this number matches the maximum number of active calls limit set above, but it can be less. Note: Set a value of zero if Line Appearance functionality is not required.
Append Enterprise Prefix to Dialback number of incoming calls.	Adds the enterprise dial plan digits (8 by default, *8 for extension mode) to the beginning of the caller's extension of an inbound call from a proxy server. This enables automatic dial back (e.g., selecting a call from the phone's "Calls" list to contact the original caller) to function properly when the proxy server requires enterprise dialing for outbound calls.
Send Digits as Dialed	Indicate sending outbound numbers exactly as dialed on the handset placing the call. In most cases, you want the number converted into NANPA dialing form, so this box is not typically checked. However, in some cases, the service provider or proxy may be doing the conversion automatically so you may want to defeat the Allworx server's conversion mechanism.
Digits Sent	Number of dialed DTMF digits sent to the ITSP when making a call. If the number specified here is fewer than the number of digits dialed by the user, only the trailing digits are sent. The default value (all digits) is typical.
Default Language (requires the Dual Language Support feature key)	The choice of languages that will be used for Allworx audio messages and greetings that are played for inbound calls through the SIP Proxy.
Default Auto Attendant	Select the auto-attendant that should be used when inbound calls from this Proxy are routed to an Auto Attendant.
Proxy is an Enterprise Server	An advanced feature that enables interfacing to external SIP proxy services that actually have dial plan knowledge of your local site. In most cases, this feature is not used. See Enterprise Dialing Feature on page 108, for more information.
Call Routing	Determines how calls received from this proxy are routed inbound to the Allworx server. This is identical to the manner how all outside lines are configured including analog phone lines and digital lines.
Advanced Settings*	
PAD DTMF RTP packets	Typically, smaller than 64 bytes. Some switches and routers discard any UDP packets shorter than 64 bytes. When

	checking this box the Allworx system pads the DTMF packet. It expands the RTP header to make the packet at least 64 bytes long. Typically, this checkbox is not checked.
Enable Early Media	Some service providers send audio before answering an outbound call (using 183 Session Progress in SIP). Use this to relay announcements (e.g. "Your call can not be completed as dialed") or remote ring back tones. When checking this box, the Allworx system presents the audio to the caller when received. When Unchecking this box, the Allworx system ignores the early audio and generates a ring back tone internally. Typically, this checkbox is checked.
Supports Symmetric Response Routing	Some service providers assist the remote end in NAT traversal by supporting RFC 3581 Symmetric Response Routing. When this checkbox is checked, a remote handset behind a NAT firewall will assume the service provider can correctly detect the audio port to send traffic to. When this checkbox is not checked, the handset needs to be port-forwarded through the NAT firewall, or must use the Allworx for proxying of audio traffic (see **Servers** > **VoIP Server**). Typically this checkbox is not checked.
Use SIP Diversion for deflected calls	Some service providers support the SIP "Diversion" header (draft-levy-diversion-08.txt) to identify the proxy account when transferring or deflecting calls that include Calling Party information.
Supports SIP REFER	This selects the method of transferring calls between multiple remote end-points through the service provider. When checking this checkbox, the system sends the SIP REFER to the service provider to enable them to connect the two end-points within their network without intervention by the Allworx. When this checkbox is not checked, the Allworx will act as a proxy between the two remote ends of the calls. Typically, this checkbox is checked.
Supports SIP Redirect	This selects the method of redirecting inbound calls that are forwarded back to the service provider without being answered (e.g., all calls are forwarded to a cell phone). If checking this box, the system sends a SIP 300 redirect message. If this Unchecking this box, the Allworx system negotiates the call setup for the service provider. Typically, this checkbox is not checked.
Use E.164 format for phone numbers	Enabling this feature causes rewriting of phone numbers into the international E.164 format (e.g. 800-555-1212 becomes +18005551212). Typically, this is unchecked unless required by the ITSP.
Offer '100rel' support	Indicate the Allworx supports 'reliability of provisional responses (RFC 3262)'. Typically, this checkbox is checked.
Obtain DID/DNIS number from [source]	For inbound calls, where the server gets the DID and DNIS information. Typically, this is set to [SIP To: header field].
Use [source] in Request URI of outbound calls	This defines the username parameter of the SIP Request Uniform Resource Identifier (URI) for outbound calls to the

	service provider. Most service providers expect to have the requested number or ID [dialed number] in this field, but some require the registered account information [address of record]. Typically this is set to [dialed number]
* These settings are specific to the ITSP. For instructions on configuring them for Allworx partner ITSPs, download the ITSP Application Notes from www.allworxportal.com.	
VoIP Settings*	
Force Remote Phone audio through server	A NAT traversal aid for remote phones that are calling other internet devices (ITSPs, other remote phones). This setting only applies to: • WAN-to-WAN calls, • Remote phones that are behind a NAT/Firewall, and • Remote phones that use RFC 3581 "Symmetric Response Routing (rport)" for NAT traversal. Note: your ITSP may require enabling this feature. When enabled: • the server will proxy the RTP packets for the end-points in the call, • twice the bandwidth is used per call. When disabled: • the server is not involved in the RTP of the call, • no bandwidth is used in the WAN-to-WAN calls, and • remote phones need to be port-forwarded through any NAT/Firewalls to use internet VoIP services
RTP DTMF Payload	Used in the SIP INVITE messages when calls are placed. The typical value is 96. Some ITSPs require other values (e.g. 101). An incorrect setting of this parameter will result in outbound calls not being able to navigate external Auto Attendants. If SIP trunks from two different ITSPs are on the same system and the ITSPs require different values, then the value should be set per the ITSP requirements for the SIP trunk used most for outbound calls. The other SIP trunk will experience the Auto Attendant problem. Also, it may not be possible to transfer calls between the trunks
*In addition to the settings on the SIP Proxy page, there are settings on the VoIP server page (Servers > VoIP) that must be checked.	
Many parameters associated with SIP Gateways are the same as their counterpart under SIP proxies. The 6x12 servers do not support SIP Gateways.	
Gateway uses SIP Registration	If the gateway supports registration, choose this option. Assign an arbitrary Login ID and Password for the gateway to use to register with Allworx. This is the desired configuration to use especially if the gateway uses DHCP to obtain its IP address so that the Allworx always knows how to contact the gateway for outbound calls
Gateway uses Static IP Address	Used when the gateway does not support registration or when you do not wish to authenticate the gateway. Contacting the

	gateway through this mechanism requires the gateway to have a static IP address. The system does not enable DNS names for security reasons.
Prefix String	Define DTMF digits prepended to the dialed number string when placing outbound calls through the gateway (e.g. '9' for dialing through another SIP PBX).

13.3.3 Enterprise Dialing Feature

The Enterprise Dialing feature enables a third party SIP server to be the central hub for calls between multiple sites that have Allworx servers. This provides a centralized phone book and administrative service for the entire VoIP network.

13.3.4 Allworx Enterprise Client

Each Allworx server can be configured as an enterprise client and direct inter-office calls to the central hub. An SIP Proxy is created for the central hub with the call routing set to Proxy is an enterprise server. The Enterprise Dialing rule (**Phone System** > **Dial Plan** page) is set to a service group that contains just the SIP Proxy entry for the central hub server. The number of digits to collect/send is set to cover the entire enterprise.

The Allworx dial plan uses an '8' prefix† to indicate that the dialed number is to be forwarded to the Enterprise Server. For example, dialing 81234 will send a SIP INVITE with a URI of <sip:1234@centralHubServer> to the Enterprise Server.

13.3.5 Central Hub / Enterprise Server

The central hub is a SIP proxy server that accepts incoming INVITEs from the Allworx servers, determines the final destination for the request, and forwards the request to the destination Allworx. It maintains an active list of Enterprise extensions and their mappings to extensions at each site. For example, an enterprise with 4-digit dialing might have the following information in its databases.

Site Account Name	Account Password	Current address	Site Description
allworx1	******	66.64.219.38:5060	New York City office
allworx2	*********	64.129.42.33:5060	Atlanta office
allworx3	*****	129.116.21.193:5060	San Diego office

† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

The current address is the IP Address and SIP Protocol port of the Allworx server. This can be static or updated through periodic SIP Registration. Configure the Enterprise extensions as follows (using 3-digit extensions):

Enterprise Extension†	User	User Extension†	Site
1234	John Doe	108	allworx1
1452	Larry Tate	111	allworx1
4689	Fred Jones	108	allworx2
5999	Jane Smith	177	allworx3

For example, John Doe in New York City dials 84689† to reach Fred Jones. The SIP INVITE is sent to the central hub with a URI of <sip:4689@centralHubAddress>. The Central Hub validates the sender's credentials and looks up 4689 in its databases. It composes an INVITE with a URI of <sip:108@64.129.42.33:5060> and sends it to allworx2. Fred Jones answers the phone and the call is established.

Shortly after, John Doe dials 81452† to reach Larry Tate. The SIP INVITE is sent to the central hub with a URI of <sip:1452@centralHubAddress>. The Central Hub validates the sender's credentials and looks up 1452 in its databases. The recipient is on the same server as the sender (allworx1), so the hub responds with a 300 Redirect with a Contact header URI of <sip:111@66.64.219.38:5060>. The Allworx server (allworx1) then initiates a call to extension 111. Larry Tate answers the phone and the call is established.

To set up Enterprise Dialing:

1. Navigate to the **Phone System** > **Outside Lines** page.
2. Either **add new SIP Proxy** or, if it already exists, click the **Modify** link the SIP Proxy that is the target for the Central Hub.
3. Check Proxy is an Enterprise Server under Call Route to indicate the SIP Server is an Enterprise central server.
4. Click the **Update** button to save settings.

Note: The steps for configuring and maintaining the SIP centralized server are well beyond the scope of this document. If you wish to deploy such an arrangement across sites, it will require detailed knowledge about use and administration of SIP proxy servers. Contact Allworx customer support for an application note with additional helpful administration.

13.3.6 Limitations with SIP Outside Lines

The following calling features are not available when using SIP trunks or SIP Gateways:

- Consultation and call transfer (using *# or *7) by recipients of Follow-Me-Anywhere call routes.
- Disconnection (hang up) of calls (using *#) when accessing outside lines through the Message Center.

However, these features ARE available when one of the parties in the call is using an Allworx phone or port expander.

13.4 Digital Lines

Allworx refers to the integrated T1 interfaces on Allworx 24x and 48x servers as Digital Lines. The Allworx 24x and 48x servers have two T1 Digital Line interfaces that are accessed through the connectors labeled T1-A and T1-B. There are differences in T1 port functionality between the 24x and 48x servers.

13.4.1 Allworx 24x

The T1-A interface can operate as a Primary Rate ISDN line and/or as a T1 data line for connectivity to another site or to an Internet Service Provider. That is, the T1-A interface supports both circuit switched voice calls and TCP/IP data. The T1-A interface also supports Robbed Bit Signaling (RBS) operation. The T1-B interface is dedicated for use as a data connection. Use the data connection for connectivity to another remote site on a dedicated T1 line or for connectivity to a service provider for Internet access.

13.4.2 Allworx 48x

One or both of the T1 interfaces can operate as Primary Rate ISDN lines, Robbed Bit Signaling (RBS) lines and/or as T1 data lines for connectivity to another site or to an Internet Service Provider. That is, the interfaces support both circuit switched voice calls and TCP/IP data. Use the data connection for connectivity to another remote site on a dedicated T1 line or for connectivity to a service provider for Internet access.

13.4.3 PRI Support

The Allworx server supports Primary Rate ISDN using the National Standard ISDN format (NI-2), Lucent Custom 4ESS, Lucent Custom 5ESS, and Nortel DMS-100 switch types. Always configure the Allworx server ISDN interface as the user side equipment with the intention of hooking to the service provider's Central Office (CO) network side equipment. The Allworx server interfaces have a fully integrated CSU/DSU and are typically intended for direct short haul connection to the service provider's smart jack. Consult the product installation instructions for further information.

Note: When using PRI operation it is important to define exactly one PRI D channel for the Digital Line and a minimum of one PRI B channel. The configuration must

match the provisioning defined by the Central Office with a typical configuration having 23 B channels on slots 1 through 23 and one D channel on slot 24.

13.4.4 NFAS Support

Non-Facility Associated Signaling (NFAS) is a PRI where multiple T1 lines share the same D channel. The Allworx server supports NFAS using the National Standard ISDN, Lucent Custom 4ESS, Lucent Custom 5ESS, Nortel DMS-100 switch types.

Note: The configuration must match the provisioning defined by the Central Office. A typical configuration has 23 B channels on slots 1 through 23 and one D channel on slot 24 of the primary T1 line, plus 24 B channels on slots 1 through 24 of the secondary T1 line. To configure NFAS on the Allworx system, connect the NFAS line with the D channel to the T1-A port.

13.4.5 Robbed Bit Signaling (RBS) or Channel Associated Signaling (CAS) Support

The Allworx server supports classical T1 Robbed Bit Signaling (RBS) trunk lines on a time slot by time slot basis. Sometimes this functionality is referred to as T1 Channel Associated Signaling (CAS). The following modes are supported:

- FXO Loop-Start
- FXO Ground-Start
- E&M Wink Start
- E&M Feature Group B
- E&M Immediate Start

For the above selections, operational use is the same as the corresponding analog interface types. The precise signaling protocols for each interface are implemented in conformance with the procedures documented in EIA/TIA-464C. Inbound Caller-ID is supported on the FXO modes, if the CO supports it and the check box is enabled on the **Outside Lines** > **Digital Lines** > **Modify** page.

For primary CO line connectivity, the FXO Ground-Start slot choice is typically preferred to minimize the possibility for glare conditions, especially when call volume is high. Furthermore, Allworx does not guarantee that the network provides an explicit disconnect signal in FXO Loop-Start mode. Normally, the user would terminate a call by hanging up the phone. However, if a call is under the supervision of the auto-attendant, the lack of a terminating signal can cause a call to remain live for an extended period of time (tens of seconds) after the call should be dead. Some FXO lines support a supplemental feature known as line-side answer supervision where the network provides an explicit signal acknowledging that the far end has picked up during an outbound call. Because not all network equipment can produce this state, calls cannot rely upon it and ignores the state.

Neither of the FXO modes supports Direct Inward Dialing (DID). However, the E&M modes do support DID, and are required if DID operation is desired. The other advantage of the E&M modes is that both of them are symmetrical protocols and can

be used to connect two PBX's back-to-back, which is not possible with the FXO configurations. To be clear, whichever mode is selected both ends must match and only E&M is symmetrical.

The Allworx server supports the configuration of any of the above modes freely mixed on the T1 line for any time slot, and enables delivering data simultaneously as desired, commonly referred to as a fractional T1 line configuration. Additionally, while not commonly needed, configure the PRI simultaneously as well.

13.4.6 Data Support

Configure the Allworx server to carry TCP/IP packets using PPP encapsulation on any combination of slots constituting a full or fractional T1 interface. In fact, even when configuring a T1 interface for circuit switched PRI operations, extra (non-voice) slots can be used for dedicated data connections as long as the remote end service provider enables such a configuration.

Each T1 interface that has data slots configured on it constitutes a single logical serial channel using HDLC encapsulation of PPP packets per RFC-1662. Even though any combination of slots can be used for data on each Digital Line, only one logical data interface can be defined per T1 line.

To use a Digital Line as the system's WAN interface (for Internet traffic, inter site, etc.), you must select the Use a T1 port as the WAN interface option on the **Network** > **Configuration** > **Modify** page after you have configured the T1 interfaces as desired.

Note: Even though Digital Lines can be configured and reconfigured without a system reboot, changes to the Network Configuration settings do require a reboot after updating them.

Note: Since the data support is fully symmetrical, it is possible to connect two Allworx server devices back-to-back between their T1 interfaces. This can be done either on the same site or across sites using a dedicated T1 line that spans between the two sites via the service provider.

13.4.7 Restrictions

Designate only one interface as the logical WAN interface for the 24x and 48x systems. That is, use only the Ethernet WAN port or one of the T1 interfaces for routing TCP/IP traffic. You must pick either Ethernet WAN, T1-A, or T1-B ports to be the data WAN interface for the system even though you are able to provision multiple interfaces simultaneously. This restriction will be removed in a future software release such that any combination of Ethernet interfaces or Digital Line interfaces can be used as redundant/simultaneous WAN interfaces.

13.4.8 Configuration

The configuration of the Digital Lines is dictated by how the service provider provisions the line to which the interface is. The settings must match the service provider's expected configuration or improper operation will result. Fully configure the line or lines in use before physically connecting the server to the T1 line.

Configuration Hint

When using a Digital Line for circuit switched voice operation (PRI or RBS modes), it is typically preferred to set all the Digital Line parameters including the functional definition for each time slot on T1 line. Once this configuration has been set, each slot configured to support circuit switch voice calls will appear as a new outside line. That is, each separate slot configured for circuit switched voice calls is logically treated as a separate telephone line. At that point, details of how that line is routed or configured are set under the Digital Lines section found on the **Phone System** > **Outside Lines** configuration page.

Parameters for each Digital Line are configured on the **Network** > **Digital Lines** > **Modify** page for the specific line you wish to configure. It is important to provision Digital Lines that are not going to be used as Disabled. The disabled state is the factory default setting for each T1 line.

Parameter	Description
Description	Description of the Digital Line interface. This description is used in all other places this line is referred to, such as in the Outlines Lines view and configuration pages of the phone system.
Line Mode	The provisioned operational mode for this interface. Currently, only T1 mode and Disabled are available. In the future, additional options may be available such as E1 and J1 for use in international markets outside of North America
Line Coding Mode	Both B8ZS and AMI modes are supported. It is strongly recommended that B8ZS mode be used if the service provider supports it. You must pick the setting that matches the service provider's setting, but lines should be ordered as B8ZS, if the CO switch enables it. Note: In AMI mode, clear channel data service is not available and only a 56K data rate will be available on each slot. Generally speaking a PRI line should always be set to B8ZS mode.
Framing Mode	The Allworx server supports both Super Frame (D4) and Extended Super Frame (ESF) modes. You must pick the setting that matches the service provider's configuration, but it is recommended to have the service provider use ESF mode, if available.
Clock Source	Enables specifying the Digital Line data clocking source reference for this interface. Network clocking is almost always the desired setting because the service provider will be the source of the timing reference and the Allworx interface will be the slave to that network clock. Internal timing mode indicates that the Allworx device is the source of the clocking time reference. This mode is useful if you are going to hook two devices back to back. In that case, one end needs to provide the clock reference and the other must slave to that master. The exact terminology may vary from

	device to device. For this setting on Allworx devices, Network mode means it is the slave and Internal Mode means it is the clock master.
Loop-back Mode	Enables the interface to be put into a diagnostic mode for testing purposes. Generally speaking you always want to select Normal Operation. The use of the test modes is beyond the scope of this document.
Normal Operation	Transmit and receive lines that connect normally and all loop back features modes are disabled.
Remote Frames	Incoming data is synchronized and decoded at the frame level. These decoded frames are then reframed locally and sent back out on the transmitted output line.
Remote Unframed	Decodes incoming data at the bit level from analog voltages to digital bits and directly sent out as a stream of bits back towards the source on the transmitted output line. No attempt is made to synchronize or verify the data at the frame level.
Local Unframed	An internal analog loop back is performed on the local interface so that transmit data is immediately looped back to the receive path. This mode is useful for verifying that the physical interface is operating correctly on the Allworx unit. Although not strictly required, Allworx recommends using B8ZS, ESF, and Clock Source Internal for such tests.
Line Build Out	Determines the pulse shape and transmit power levels used on the analog output of the Digital Line interface. The dB settings are for long haul configurations and the distance settings for short haul configurations. Always use the short haul settings since Allworx equipment is intended for use with a local smart jack only and not for driving the physical T1 lines on the telephone poles directly. You must pick the length setting that matches the cabled distance between the Allworx server and the service provider's demarcation point. If this setting is improperly configured line errors may be very common or problematic and affect system reliability.
PRI Switch Type	Select the Primary ISDN (PRI) switch type that is used by the service provider. Select NONE if this interface is not connected to a PRI based service. Note: If this parameter is improperly configured your telephone service will most likely work, however there will be subtle problems when certain type of conditions occur such as calling cell phones, busy numbers, or during network congestion. Additionally, Caller ID functionality may be affected as well. Take care to find out the correct setting from the service provider and set this parameter accordingly
Voice Channel Selection Order	Determines the order the Allworx PBX will attempt to seize a line for outgoing calls within each service group assigned to this Digital Line. You want to set this selection to be the opposite direction that the service provider uses for incoming calls. For example, if the service provider hunts incoming calls starting from slot 1 towards higher numbered slots

	looking for the first available channel for a new incoming call, you will want to configure the PBX for Descending Mode. If the service provider starts at the top and hunts toward lower-numbered slots, select Ascending Mode. This parameter is not critical but having it properly set dramatically lowers the probability for a condition called glare where both the PBX and the Central Office attempt to put the same slot into service simultaneously for two unrelated calls.
Caller ID Name	Since most PRI lines hook directly into the international SS7 telephone signaling network, it is possible to have parties you call see any Caller-ID string you desire them to see. For analog phone lines, your CO determines this string but for PRI lines, the Allworx server can determine it. Set the caller ID name field to the value you wish called parties to see when placing outgoing calls on this Digital Line. Note: The service provider may override these settings.
Caller ID Number	The phone number presented to called parties for outgoing calls. See name setting above for more information.
Prefer Originally Dialed Number (RDNIS) for display	This causes T1/PRI originally-dialed/redirected phone number to be displayed on Allworx phones if the original call was redirected and the original call information is provided by the CO.
Prefer Originally Dialed Number (RDNIS) for DID lookup/call routing	This causes T1/PRI originally-dialed/redirected phone number to be used in DID routing, if the original call was redirected and the original call information is provided by the CO.
PPP Username	This is the login account name to use for this Digital Line when the line has one or more slots defined on it for data operation. If authentication is not required, leave this field blank.
PPP Password	This is the login account password to use for this Digital Line when the line has one or more slots defined on it for data operation. If authentication is not required, leave this field blank.
PPP MTU	Determine the Maximum Transmit Unit Size to use when sending IP packets to the remote end. The Allworx firewall will force TCP connections to negotiate a MTU no larger than this value. Typically the default value is 1500. The normal Ethernet maximum will suffice however lower values may be required depending on the service provider. If you are having problems consult your data service provider for advice. If you are unsure of a proper value to use and are having data connectivity problems, a value of 512 will negatively impact performance, but should always work.
PPP HDLC Fill	Fill value to use on the data line across all slots when the data connection is idle between HDLC frames. Typically the default value of all 1's will suffice, but a flag fill may be desired in AMI line mode.

Source IP Address	Determine the static IP address for the Allworx server end of a data connection. Typically, this is the public IP address associated with your ISP connection. If entering a value of 0.0.0.0, expect the service provider to provide the correct value dynamically during session establishment, if the service provider supports that. Consult your ISP for more information.
Destination IP Address	Determines the static IP address associated with the router/gateway at the far end of this Digital Line. Use a value of 0.0.0.0 to have the service provider assign the proper value, if the service supports that. Consult your ISP for more information.
Channel Assignments	On a Digital Line, you must specify the desired operating mode for each time slot per the provisioning defined by the service provider or the device you have connected at the other end of the Digital Line. If the proper selections are not made, improper operation will result. Currently the following modes are supported: Disabled – Indicates that this time slot is not used on this Digital Line PRI B Channel – A bearer channel for ISDN PRI operation that can be used for carrying voice calls. Specifying this mode, in effect, defines a new outside line for the PBX for each slot configured in this mode. PRI D Channel – A data-signaling channel for ISDN PRI operation, which is used for transporting call control information between the PBX and the Central Office. The Allworx server always operates as user equipment on a PRI line. If PRI operation is enabled on this line, exactly one slot must be configured as the PRI D channel. Typically, this will be slot 24. When using NFAS, the D channel must be on the T1-A port.
T1 E and M Immediate Start RBS	A circuit switched Ear and Mouth mode Robbed Bit Signaling trunk that uses Immediate Start signaling. Specifying this mode defines a new outside line for the PBX for each slot configured in this mode. This mode is symmetrical and can be used to hook PBXs back to back to tie PBXs between sites on a leased line.
T1 E and M Wink FG-B RBS	A circuit-switched Ear and Mouth mode Robbed Bit Signaling trunk. Specifying this mode defines a new outside line for the PBX for each slot configured in this mode. This mode is symmetrical and can be used to hook PBXs back-to-back to tie PBXs between sites on a leased line. Only DTMF signaling is used. Multiple Frequency (MF) signaling is not supported.
T1 E and M Wink FG-D RBS	A circuit-switched Ear and Mouth mode Robbed Bit Signaling trunk. Specifying this mode defines a new outside line for the PBX for each slot configured in this mode. This mode is symmetrical and can be used to hook PBXs back-to-back to tie PBXs between sites on a leased line. Only DTMF

	signaling is used. Multiple Frequency (MF) signaling is not supported.
T1 FXO Loop-Start RBS	A circuit switched Foreign Exchange Office style interface mode that digitally emulates the standard analog telephone line interface that uses Loop-Start signaling. Specifying this mode, in effect, defines a new outside line for the PBX for each slot configured in this mode. If call volume is high, this mode is less desirable than FXO Ground-Start Operation. This connects to the service provider interface that is operating as the FXS side of the interface. This mode is NOT symmetrical.
T1 FXO Ground-Start RBs	A circuit switched Foreign Exchange Office style interface mode that digitally emulates the standard analog telephone line interface using Ground-Start Signaling. Specifying this mode, in effect, defines a new outside line for the PBX for each slot configured in this mode. The Ground-Start operation is able to minimize the possibility of glare especially when call volumes are high, making it more preferable than Loop-Start. This is intended to connect to the service provider interface that is operating as the FXS side of the Ground-Start interface. This mode is NOT symmetrical.
56K Data Channel	Specifies that 56Kbits/sec of bandwidth is provided by this slot for the Digital Line's logical data connection. This mode is typically only used if 64K clear channel service is not available. This is the only mode that should be used for data connections when AMI Line Code mode is selected.
64K Data Channel	Specifies that 64Kbits/sec of bandwidth is provided by this slot for the Digital Line's logical data connection. Use this when clear channel data service is available. Do not select this mode if the Digital Line's AMI Line Code mode is selected.

13.5 Allworx Port Expanders

The Allworx PX 6/2 Expander provides expansion of the system's analog capability by adding six (6) FXO and two (2) FXS ports to any Allworx server. The PX 6/2 Expander features plug-and-play installation for locally connected units. Remote installation is possible using an approach similar to installing remote Allworx phones. For detailed installation instructions, see the Allworx PX 6/2 Expander Installation Guide.

Note: Do not use Allworx Port Expanders with 6x12 servers.

Settings that apply to the port expander are available on the Port Expanders page. Use the following information to configure these settings on installed Allworx PX 6/2 Expanders:

To configure Allworx port expanders navigate to **Network** > **Port Expanders**. This shows a list of all Allworx port expanders known to the Allworx server. A number of functions are available by clicking port expander-specific links.

Functions	Description
Description/View Configuration	Open the configuration page for updates.
Delete	Removes all related configurations and port definitions from the system.
Replace	Enable replacing the port expander by another port expander while automatically transferring all the configuration parameters and settings to the new unit. Use this when replacing a defective port expander with a new one.
Handsets	Jumps to the Handsets page to configure port expander FXS ports
Outside Lines	Jumps to the Outside Lines page to configure port expander FXS ports
IP Address	Opens the port expander's web admin page in a separate browser window or tab. Use this link to view the port expander's event log or view/modify its on-board settings.
Reboot	Reboots the Port expander after making configuration changes to the expander or any of its ports. When the button is clicked, the reboot will start as soon as all of the port expander's ports are idle

13.5.1 Port Expander Options

Clicking on the port expander's Description opens its View Configuration page. Use this page to show and modify the options for that port expander. To change the configuration, click the **Modify** link. Other options are identical to those on the Port Expanders page.

Options	Description
MAC Address	Hardware identifier for the port expander. It cannot be changed.
IP Address	Network address for the port expander. Clicking on it will open the port expander's web admin page in another browser window or tab. The IP address cannot be changed
Description	Name given to the port expander. During plug-and-play installation, the Description is set to the port expander's MAC address. Changing it to something more meaningful to the site or configuration is recommended
Codec Preference Order	Set the preferred codec order for the port expander. The codec is the method of encoding/decoding the audio sent and received. The two possible codec's are G.711 and G.729A. G.711 preserves voice quality but takes more bandwidth. G.729A takes less bandwidth but reduces voice quality Note: This setting defines the order of codec selection. Not all codec's are supported for all call types (for example, accessing the server Auto Attendant requires G.711). The port expander will attempt to use the first choice but will use whichever codec is required to support calls.
RTP Media Range (Port to Port)	Specifies the range of UDP ports used for Real Time Packet communications. Using a maximum range of values makes the port expander the most secured from snooping and denial of service activities. However, when remote port expanders are placed behind 3rd-party firewalls, under certain conditions the UDP port range may need to be restricted so that mapping rules can be created for each port expander behind the firewall. See Chapter 17, Remote Allworx Phones and Port Expanders, for more information.
SIP NAT Keep-alive Interval	Some NAT firewalls will automatically time out and close connections to devices they protect. If a remote port expander is behind such a firewall, then this setting prevents the timeout. Messages called keep-alive packets are sent from the port expander to the Allworx server at the frequency specified. The value should be set to an interval that is shorter than the firewall timeout
SIP Port	UDP port number used for the SIP protocol by the port expander. The default value of 5060 should be used unless the port expander is behind a 3rd-party firewall and the network requires a different value.

Time Zone	Specify the time zone that the handset uses to compute its local time. Select the use current server setting if the port expander is in the same time zone as the server. For a remote port expander, you may want to use the time zone of its actual location.
Daylight Savings Time	Specify if the port expander will use Daylight Savings Time (DST) to compute its local time. Select use current server setting if the port expander is in the same time zone as the server. For a remote port expander, you may want to use the DST setting of its actual location.
Jitter Buffer Size	Alter the size of the jitter buffer. Jitter is a variation in network audio packet latency experienced by the port expander, resulting in a reduction in audio quality. The port expander uses a jitter buffer to maximize the audio quality when jitter occurs.

13.5.2 Configuring FXO and FXS Ports

After installing an Allworx Port Expander, the Allworx Server Administrator can configure the FXS and FXO ports on the Handsets and Outside Lines pages, just like the server's own ports. On the Dial Plan page, the system adds port expander FXO ports to the default service groups. The system enables creating new custom service groups or modifying existing groups to include the port expander's FXO ports.

13.6 Outside Line Call Routing

Each outside line (CO Line, DID Line, SIP Proxy, SIP Gateway, or a Digital Line) has a call route associated with it. Go to **Phone System** > **Outside Lines** and click the **Modify** link on one of the CO lines. The Outside Lines page displays.

The Call Route section in the figure above directs the call coming into the system through Digital Line 1 channel 01.

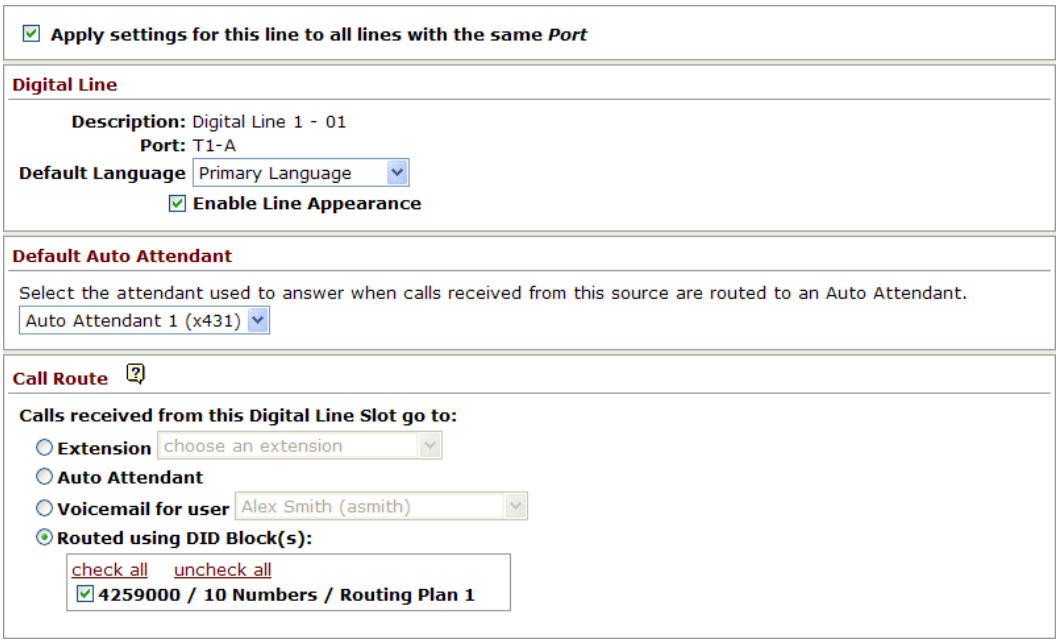
Call route	Description
Extension	Routes incoming calls to a User or System extension. Using a System Extension provides more call routing flexibility and enables using a common route for multiple lines.
Auto Attendant	Routes an outside line to an Auto Attendant, it goes to the designated Auto Attendant that defined in the Default Auto Attendant section.
Voicemail for user	Calls that come into the System would go directly to a voicemail box for a User.
Routed using DID Block(s)	When using DID blocks for incoming calls, the DID block has to be enabled for the outside line or each desired channel, if using digital lines (See Chapter 22, Direct Inward Dialing (DID)**.** for more information).

To create the DID Lines:

Configure each of the incoming lines that will use DID blocks. The following line types can use DID blocks:

- T1/PRI
- T1/RBS
- SIP Proxy
- SIP Gateway

The Modify window for a T1/PRI Digital Line:


Apply settings for this line to all lines with the same Port
Digital Line
Description: Digital Line 1 - 01
Port: T1-A
Default Language Primary Language
Enable Line Appearance
Default Auto Attendant
Select the attendant used to answer when calls received from this source are routed to an Auto Attendant.
Auto Attendant 1 (x431)
Call Route
Calls received from this Digital Line Slot go to:
Extension choose an extension
Auto Attendant
Voicemail for user Alex Smith (asmith)
Routed using DID Block(s):
check all uncheck all
4259000 / 10 Numbers / Routing Plan 1

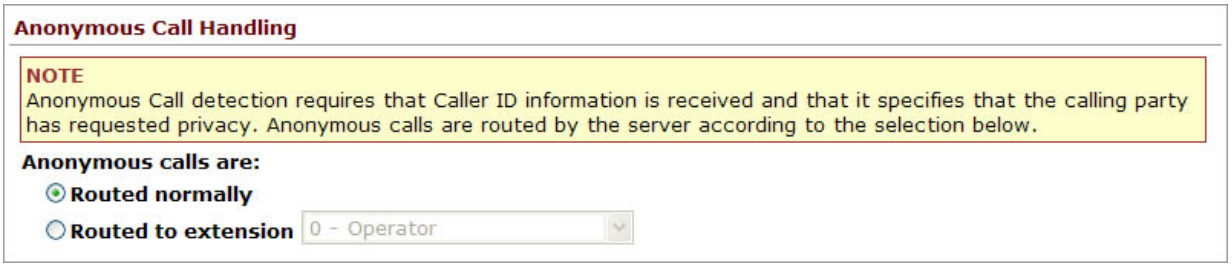
Click on Routed using DID Block(s) and check the block or blocks to use for this outside line.

Note: For Digital lines, do this for each channel. If all channels will use the same settings, check the **Apply settings for this line to all lines with the same Port** box.

13.7 Anonymous Call Handling

Anonymous Call Handling provides the Allworx Server Administrator with a way to handle calls for which the caller has requested privacy. The Allworx Server Administrator can route such calls to a specific extension.

1. Navigate to **Phone System** > **Outside Lines** and click the **modify** link to configure Anonymous Call Handling. Routes private calls normally on the system or to any user or system extension, including the operator.


Anonymous Call Handling
NOTE
Anonymous Call detection requires that Caller ID information is received and that it specifies that the calling party has requested privacy. Anonymous calls are routed by the server according to the selection below.
Anonymous calls are:
Routed normally
Routed to extension
0 - Operator

2. Select **Update** to save the changes.

Note: Not all ITSPs support Anonymous Call Handling.

14 Dialing Rules and Service Groups

This section describes the procedures the Allworx system follows for placing outbound calls.

14.1 Dialing Rules

As a user dials digits on a phone, the system collects the digits, one at a time. How does it know when it should wait for more digits (because the user is dialing slowly) or when it should take the digits it has and try to make a call with them? The Dialing rules are the rules the server follows. Dialing Rules specify to the Allworx server what digit sequences are valid for dialing out on the public phone network.

Examples:

When dialing a local number, you do not normally dial 1 and the area code. So, the system should collect the first 7 digits dialed and then try to make the call. The server should not be waiting for more digits.

When you dial a long distance number, you normally dial 1 plus the area code and then the 7 digit local number. The system needs to recognize this case distinctly from the local number case and know to collect all 11 digits before trying to make the call.

In addition, some local calling areas require an area code to be dialed without the 1 prefix in order to properly dial some numbers. This implies that these rules may vary depending on the local calling area where the Allworx server is installed.

14.1.1 Emergency Dialing

For sites that are using PBX mode or sites that are using PBX mode in the factory default configuration, users must dial the outside line access digit (e.g. 9) when placing external calls including when dialing emergency calls (e.g 9 911). The Allworx Server Administrator can configure the system to permit emergency calls to be dialed directly, without the outside line access digit (e.g. 911).

1. Navigate to **Phone System** > **Dial Plan**. Go to the External Dialing Rules section, locate the Emergency table, and click the **Modify** link for Emergency rules.

2. Check the **Dial Direct** box.

3. Click **Update**, and then reboot all phones.

14.1.2 Home Area Code

Some features of the Allworx server and phones (example: redialing from call history and when mapping numbers to 11-digit form to SIP proxies) require the knowledge of the home area code. Therefore, this information is a required part of the dialing rules to enable those features to operate as expected.

14.2 Service Groups

The server can use a variety of services to place outside calls such as: Digital Lines, CO lines, SIP Gateways, and SIP Proxies. Some of these services may be optimum for particular types of calls. For example, your SIP Proxy might be the least expensive way to make long distance calls but your CO lines are best for local calls.

A Service Group is a collection of services that can be used to place outside calls. The server creates several Service Groups automatically:

- All Digital Lines
- All Digital Lines & CO Lines
- All Digital Lines, CO Lines & SIP Gateways
- All SIP Gateways
- All SIP Proxies
- All Trunk Devices

Note: Calls can be routed to Remote Allworx sites in order to use the remote sites' outside lines. However, remote sites should not be the only method available for external calls to be placed. Loss of Internet connectivity between the local site and the remote site (at either end) may disable the ability to place calls including 911 Emergency calls.

Note: The Digital Line Service Group is only available on Allworx 24x and 48x servers.

Additional Service Groups can be defined by the System Administrator to control the use of services or set of services for certain dialed calls.

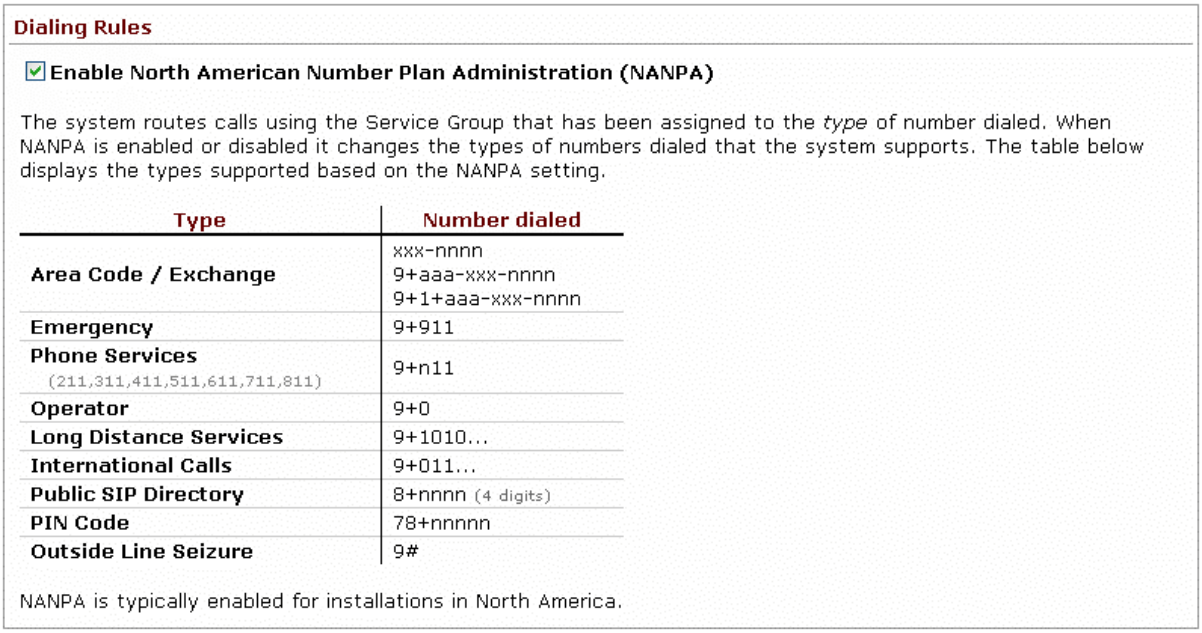
14.2.1 Exceptions

Dialing Rules and Service Groups are only used for Call Appearance, not for Line Appearance calls. This is because Line Appearance calls access outside lines, directly.

The server's dialing rules utilize the North American Numbering Plan (NANP). If your Allworx server is located in an area that does not use NANP, then access outside lines using Line Appearance PFKs or by dialing '9#'. Lines can also be accessed by dialing 9 then the phone number. The system will wait six (6) seconds before initiating the call to make sure that the user has finished dialing. To initiate the call immediately, press the # key after the last phone number digit.

14.2.2 North American Numbering Plan Administration (NANPA)

The Allworx server routes calls using the Service Group that has been assigned to the type of number dialed. When enabling NANPA or disabling it changes the types of numbers dialed that the system supports.



Dialing Rules

☑ Enable North American Number Plan Administration (NANPA)

The system routes calls using the Service Group that has been assigned to the *type* of number dialed. When NANPA is enabled or disabled it changes the types of numbers dialed that the system supports. The table below displays the types supported based on the NANPA setting.

Type	Number dialed
Area Code / Exchange	xxx-nnnn 9+aaa-xxx-nnnn 9+1+aaa-xxx-nnnn
Emergency	9+911
Phone Services (211,311,411,511,611,711,811)	9+n11
Operator	9+0
Long Distance Services	9+1010...
International Calls	9+011...
Public SIP Directory	8+nnnn (4 digits)
PIN Code	78+nnnnn
Outside Line Seizure	9#

NANPA is typically enabled for installations in North America.

Enable NANPA for installations in North America and disable NANPA for all other locations.

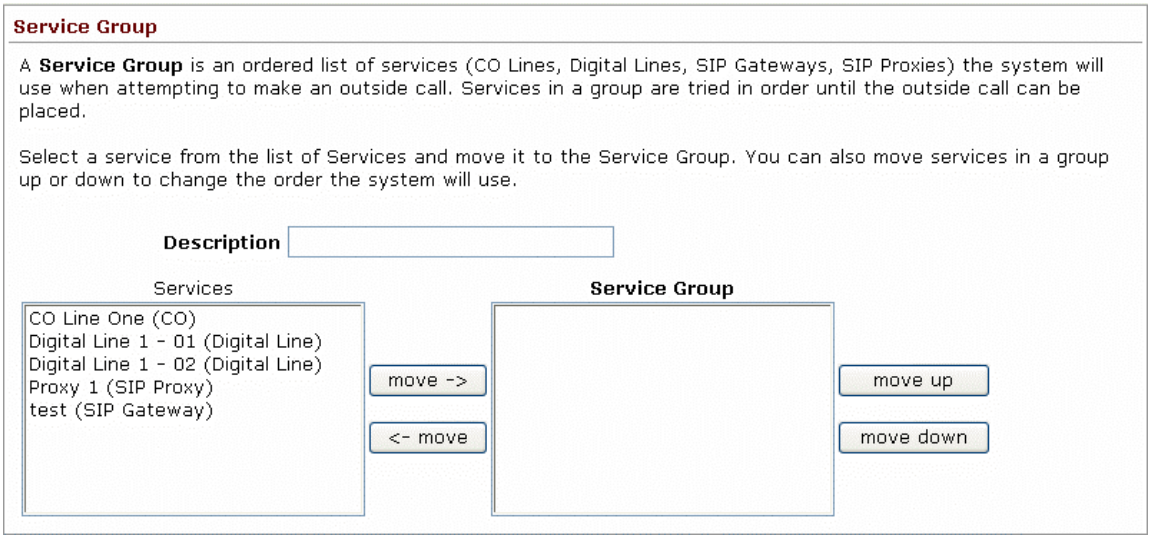
When NANPA is disabled (unchecked) access the outside lines using the steps described in the Exceptions section, above.

14.3 Defining Service Groups

To add a new service group:

1. Navigate to **Phone System** > **Dial Plan**. Go to the Service Groups section.

2. Click the **add new Service Group** link. The New Service Group page displays. Alternately, click copy of a service group to create a copy, and then click the **Modify** link.


Service Group
A Service Group is an ordered list of services (CO Lines, Digital Lines, SIP Gateways, SIP Proxies) the system will use when attempting to make an outside call. Services in a group are tried in order until the outside call can be placed.
Select a service from the list of Services and move it to the Service Group. You can also move services in a group up or down to change the order the system will use.
Description
Services
Service Group
CO Line One (CO)
Digital Line 1 - 01 (Digital Line)
Digital Line 1 - 02 (Digital Line)
Proxy 1 (SIP Proxy)
test (SIP Gateway)
move ->
<- move
move up
move down

3. Enter a Description for the new group, and then move the desired services into the Service Group box.

4. Click **Update** when finished.

   When an outbound call is initiated using the Service Group, the services in the group will be tried in top-down order until an idle service is found. The call made uses the first idle service in the list. Therefore, the last step in setting up a Service Group is to ensure that the order of the services reflects your preferred priority of use. When one of the services in the group is a SIP proxy, consider the SIP proxy idle until reaching its Maximum Active Calls setting.

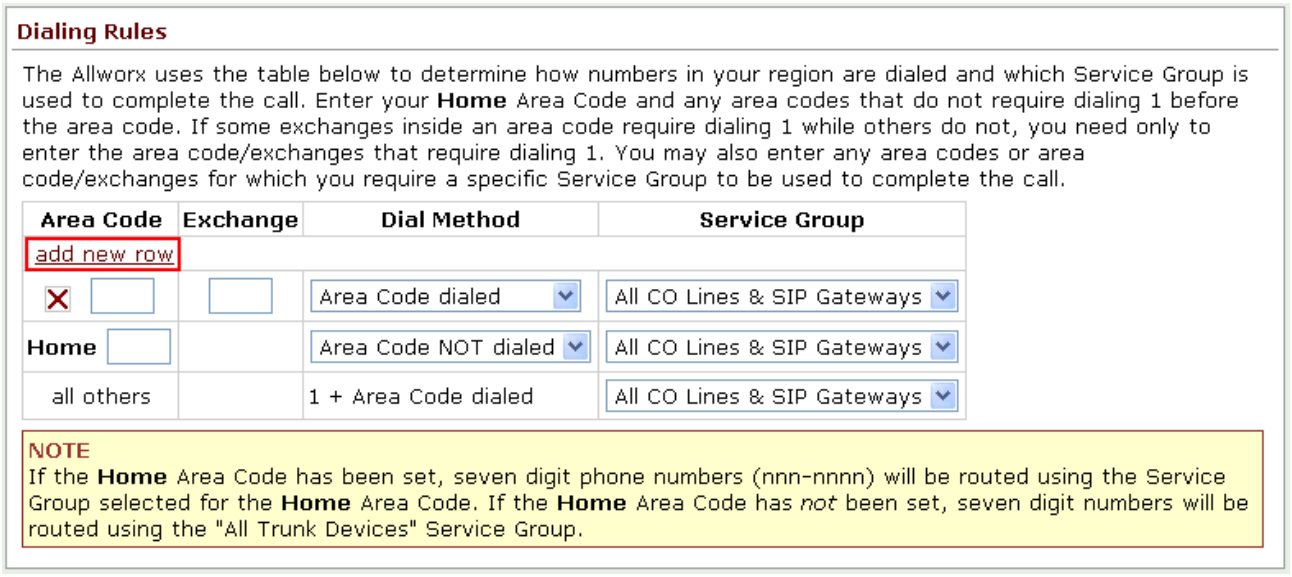
14.4 Configuring Area Codes

Configure the area codes for two reasons: (1) To make sure the correct service is used for the local and other area codes and (2) to make sure that the correct number of digits is used when the call is placed. The Dial Method controls whether or not the area code is to be included when the placing the call. If the area code is not properly configured for the local rules, local calls may not be placed correctly.

To configure area codes:

1. Navigate to **Phone System** > **Dial Plan**. Go to the External Dialing Rules section.

2. Locate the Area Code table, and select the **Modify** link.


Dialing Rules
The Allworx uses the table below to determine how numbers in your region are dialed and which Service Group is used to complete the call. Enter your Home Area Code and any area codes that do not require dialing 1 before the area code. If some exchanges inside an area code require dialing 1 while others do not, you need only to enter the area code/exchanges that require dialing 1. You may also enter any area codes or area code/exchanges for which you require a specific Service Group to be used to complete the call.
Area Code
Exchange
Dial Method
Service Group
add new row
Area Code dialed
All CO Lines & SIP Gateways
Home
Area Code NOT dialed
All CO Lines & SIP Gateways
all others
1 + Area Code dialed
All CO Lines & SIP Gateways
NOTE
If the Home Area Code has been set, seven digit phone numbers (nnn-nnnn) will be routed using the Service Group selected for the Home Area Code. If the Home Area Code has not been set, seven digit numbers will be routed using the "All Trunk Devices" Service Group.

3. Enter your Home Area Code and set the Dial Method. Most local calling areas will set the Dial Method to Area Code NOT dialed (i.e. 7-digit dialing). This sets up the digits the Allworx server sends for local calls, whether or not the phone user dials the area code.

   Notice the "all others" area code entry. Its Dial Method is permanently set to 1 + Area Code dialed. This sets up the dialing rule for most long distance calling.

4. Choose the desired Service Group from the drop-down list.

5. Click the **add new row** link, if there are any additional area codes with unique Service Group requirements. Enter the Area Code and exchange, if needed, select the Dial Method, and choose the Service Group.

6. Click **Update** to save the changes. The Dial Plan page displays.

   After setting the Home Area Code, the Service Group routes 7-digit phone numbers (nnn-nnnn) for selected for the Home Area Code.

   If the Home Area Code has not been set, the system uses the All Truck Devices Service Group to route 7-digit numbers.

14.5 Remote Sites as Services

The Allworx Server Administrator can select remote sites as services for handling outbound calls. If the line selection process results in a routing call to a remote site, the call connects using one of the remote sites' outside lines. The dialing rules that are configured on the remote site will determine which of its lines are used and how the number will be dialed (e.g. with or without area code).

It is possible to configure the dial plans on multiple sites accidentally so that the system routes a call back and forth among the sites. The Allworx system will automatically prevent this from occurring. If a call comes to a server from a remote site, the receiving server will not forward the call to the same or other remote sites. If the dialing rule that the call is using on the receiving site includes any remote sites, the system skips the remote sites and some other outside line service will be used.

Note: Remote sites should not be the only method available to place external calls. Loss of Internet connectivity between the local site and the remote site (at either end) may disable the ability to place calls including 911 Emergency calls.

14.6 Audit Pin Codes

The Audit Pin Number requires users to use a PIN code when accessing an outside line. The Allworx Server Administrator configures the handsets. To place a call from a handset, the user dials 78 + PIN code + phone number. Example: when calling 555 1222 using PIN code 77777, the user dials the sequence 78 + 77777 + 5551212.

Limitations of the Audit Pin Number feature:

- For use with an analog phone service connected to 6x, 10x and 24x servers.
- For use with a digital line service (T1) of the 24x servers.
- Not for use with site-to-site calls between 6x, 10x and 24x servers.

To specify the number of digits and the service group affected:

1. Navigate to **Phone System** > **Audit PIN Codes**.
2. Go to the Audit PIN Codes section and click the **modify** link.
3. Go to the PIN Code line and adjust the number of digits and the affected Service Group.
4. Click the **Update** button to save the changes.

To create the PIN code:

1. Navigate to **Phone System** > **Audit PIN Codes**.
2. Go to the Audit Pin Code section and click the **add new PIN code** link.
3. Type the new PIN code and a PIN Code description in the respective fields.
4. Click the **Add** button to save the changes. The Audit PIN Codes page displays.

To enable or disable the Audit PIN Code Configuration:

1. Navigate to **Phone System** > **Audit PIN Codes**.

2. Go to the Audit Pin Code Configuration section and click the **modify** link. Select Enabled or Disabled from the drop-down list.

   Enabled - the Allworx server verifies that the PIN code is the correct length and matches the password in the Allworx server.

   Disabled - the Allworx server only checks for the correct PIN code length

3. Click the **Update** button to save changes.

14.7 Dialing Privileges Groups

A handset Call Appearance's dialing privileges determine if and how to access outside lines, which uses outside lines, and what phone numbers are enabled or blocked. A Dialing Privileges Group is a set of dialing privileges and a list of handset Call Appearances with those privileges. Dialing Privileges Groups allow configuring handsets easily and efficiently. Apply custom configurations to any or all of a site's handsets by creating a Dialing Privileges Group, specifying the privileges, and assigning handset Call Appearances to the group. Unlike with User Templates, no additional configuration steps are required to apply the options. Changes made to the group's settings take effect immediately.

To view the Dialing Privileges Groups, navigate to **Phone System** > **Dial Plan**, and locate the Dialing Privileges Groups section.

The system includes a system default group. Unlike default User Templates and Handset Preference Groups, the Allworx Server Administrator can modify the settings of the default Dialing Privileges Group. When upgrading Allworx servers to Release 7.0 or higher, additional Dialing Privileges Groups are created for each unique combination of Outside Line Connection settings for the existing phones. The handset Call Appearances with those options automatically becomes members of the corresponding new group.

Note: Settings for existing handsets are NOT changed in this process.

Dialing Privileges Groups

Name	Action
Dialing Privileges (Default)	View Copy
Copy of Dialing Privileges (Defa	View Copy
Dialing Privileges Group #1	View Copy
Tech Support DPG	View Copy Delete

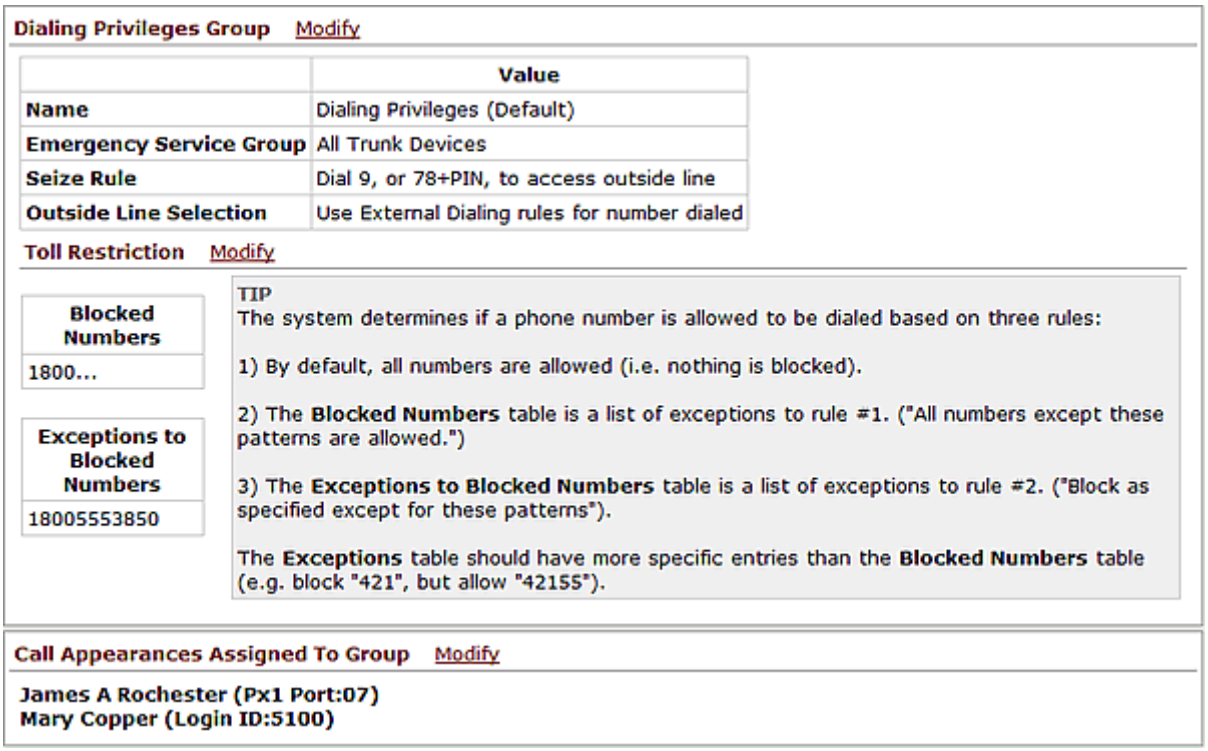
Dialing Privileges Group settings include the following:

- Emergency Service Group
- Outside Line Selection Method
- Toll Restrictions

14.8 Toll Restrictions

The server applies Toll Restrictions using two lists: Blocked Numbers and Exceptions to Blocked Numbers. By default, the system enables all numbers unless listed in the Blocked Numbers list. Numbers in the Exceptions list override the blocked numbers. If listing a number as both blocked and as an exception, the system permits calls to that number. Entries in the Blocked Numbers list need not be complete phone numbers but can be only the first part of phone numbers. For example, entering 1900 in the Blocked Numbers list will prevent all 900 number calls.

Entries in the Exceptions list should be more specific than those in the Blocked Numbers list. As examples, if the Blocked Numbers list contains "1" as an entry and the Exceptions to Blocked Numbers list contains "1800", then users can dial toll-free numbers but no other long distance number. If the Blocked Number list contains a complete number (e.g. 19005553850) then only that number is blocked. The Exceptions to Blocked Numbers list does not need to have any entries to specify enabling similar numbers.


Dialing Privileges Group Modify
Value
Name
Dialing Privileges (Default)
Emergency Service Group
All Trunk Devices
Seize Rule
Dial 9, or 78+PIN, to access outside line
Outside Line Selection
Use External Dialing rules for number dialed
Toll Restriction Modify
Blocked Numbers
1800...
Exceptions to Blocked Numbers
18005553850
TIP
The system determines if a phone number is allowed to be dialed based on three rules:
1) By default, all numbers are allowed (i.e. nothing is blocked).
2) The Blocked Numbers table is a list of exceptions to rule #1. ("All numbers except these patterns are allowed.")
3) The Exceptions to Blocked Numbers table is a list of exceptions to rule #2. ("Block as specified except for these patterns").
The Exceptions table should have more specific entries than the Blocked Numbers table (e.g. block "421", but allow "42155").
Call Appearances Assigned To Group Modify
James A Rochester (Px1 Port:07)
Mary Copper (Login ID:5100)

14.8.1 Managing Handsets in Dialing Privileges Groups

To add Call Appearances to a Dialing Privileges Group:

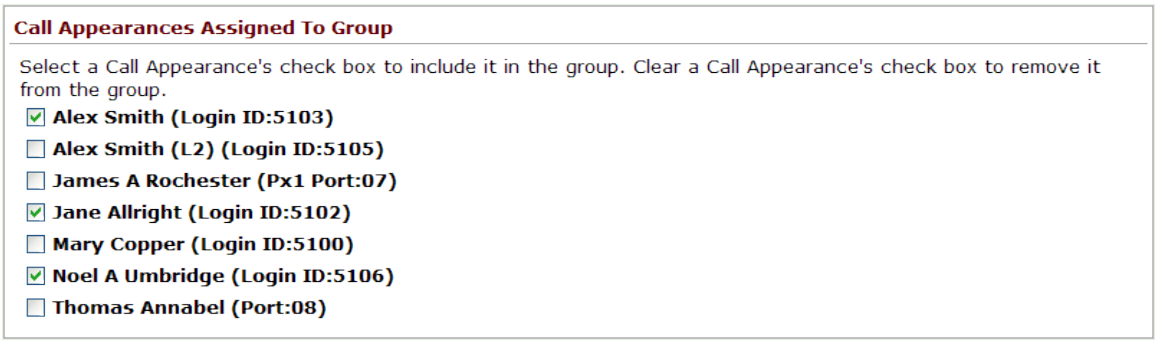
1. Navigate to **Phone System** > **Dial Plan**, and locate the Dialing Privileges Groups section.

2. Locate the specific Dialing Privileges group, and click the **View** link.

3. Locate the Call Appearances Assigned To Group section, and click the **Modify** link.

   When removing a Call Appearance from a handset, it moves automatically to the Dialing Privileges (Default) group.

   To move a handset to a different group, select the handset's checkbox from within the configuration page.


Call Appearances Assigned To Group
Select a Call Appearance's check box to include it in the group. Clear a Call Appearance's check box to remove it from the group.
Alex Smith (Login ID:5103)
Alex Smith (L2) (Login ID:5105)
James A Rochester (Px1 Port:07)
Jane Allright (Login ID:5102)
Mary Copper (Login ID:5100)
Noel A Umbridge (Login ID:5106)
Thomas Annabel (Port:08)

4. Click **Update** to save changes. Reboot the phones for the configurations to take effect.

14.8.2 Deleting Dialing Privileges Groups

Delete the dialing Privileges Groups by clicking on the **Delete** links. However, the Allworx Server Administrator cannot delete the default group and groups that have handsets assigned to them. Therefore, move all handsets into other groups in order to delete the group.

14.9 Service Groups and Handset Outside Line Interaction Restrictions

Use Service Groups to direct the placement of outbound calls to particular services. The server chooses the first idle service in the group. However, the Allworx Server Administrator can configure a handset to restrict its use of lines further when placing an outside call. According to the number dialed, the system finds the configured Service Group for a particular outbound call.

- After finding the first idle service in the group, the Outside Line Selection Method in the handset Call Appearance's Dialing Privileges Group is checked.
- If the idle service is restricted for the handset, then the next idle service is found and the handset check is made again.
- This continues until the system finds a non-restricted idle service to place the call.

If the system cannot find a non-restricted idle service, the caller hears a fast busy signal indicating that there are no available outside lines.

15 Unified Messaging

The Allworx server supports unified messaging such as combining a user's voicemail and email messages into one inbox. The important properties of unified messaging:

- Voicemail and email are stored in one inbox on the server. Messages from this inbox can be forwarded to another email account or POP'd to an email client.
- Using a phone, the voicemail messages can be listened to, deleted, etc. When deleting a voicemail message via a phone, the server inbox also deletes the voicemail message.
- When deleting unified messages off the server because of a POP or a mail forward, the server deletes the voicemail as well, and is no longer available on a phone.

15.1 Access Mechanisms

The two main ways to access your voicemail and email messages from the server are:

- Forwarding messages to another email account.
- Using a POP3 or IMAP email client to transfer the messages to your PC.

Note: IMAP is only available if installing a Mobile Link key on the server.

15.1.1 Forwarding Messages via Message Aliases

Using the server's Message Aliases feature you can forward any incoming message (voicemail or email) for a user to an external (non-Allworx server) email account.

Note: If saving copies of all messages on the server, eventually users may exceed their inbox storage space quota on the server. To avoid this, users should manage and delete old messages in the Message Center. Administrators can delete saved messages for individual users on the **Reports** > **Users** page.

1. Navigate to **Business** > **Message Aliases**.
2. Click **add new alias** link. This displays the Add new Alias page.
3. Locate the Email Alias field and enter the user's Allworx login name.
4. Locate the Members field and enter the external email address. To save a copy of the message on the Allworx server, also enter the user's login name in the Members list - doing this enables users to listen to and manage their voicemails using the Allworx Message Center even though the system emailed a copy.

   If the Message Alias does not include the user's Allworx login name as a member, the systems deletes the voicemails as soon as emailing it.
5. Click **Add** after entering all Members. The Message Aliases page displays.

15.2 Common Mistakes in Forwarding Messages

A common error is assigning the Allworx server's domain name to be that of an existing domain name.

Example:

MyCompany pays an Internet hosting service to provide email for all their employees at user@mycompany.com. The employees get their email by configuring their email application to POP the email off the hosting service's email server. When installing the Allworx server, it receives a domain name of mycompany.com.

This creates a problem when configuring the Internet DNS servers so that mail sent to user@mycompany.com to the external hosting service's IP address, but the Allworx DNS server thinks it is responsible for handling email for the same domain name. Then when putting user@mycompany.com in the members list, the Allworx server says, "That's me!" and sends the email to himself instead of to the external IP address. The solution is not using the same domain name for both.

15.2.1 External SMTP Accounts

Forward voicemail and email using external Internet SMTP services such as gmail and hotmail. The **Servers** > **Email** page includes SMTP server settings that permit entering the login credentials for an existing email account. This account would be used for email, voicemail, and text alerts. For user voicemail, it will send the email to the address in the user's Message Alias.

Use personal email accounts for individual users. Configure the user's Internet email service account on their **Business** > **Users** > **Modify** page. If configuring a personal email account for a user, the system uses their account rather than the global account that was set up on the Email Server page. For user-specific accounts to be functional, configure a global SMTP email account.

15.2.2 POP3 Client

Using the POP3 Mail Transfers section of the **Business** > **Users** > **Modify** User page, configure each Allworx user so that a POP3 request to transfer email to a POP3 client will work:

- Email and voicemail messages.
- Email messages only.
- No messages.

Only the first option will transfer voicemail messages to the PC's inbox.

Configure an email program on the PC that each user will be receiving messages to pop the messages from the Allworx server. Use the following information to configure the email program:

- Enter the IP address of the Allworx server's LAN TCP/IP Address (from the Network / Configuration page) as the incoming POP3 server address.
- Enter the same address as the outgoing SMTP server address.
- Enter the Allworx login name and password for the user as the POP3 user and password.
- Do not use Secure Password Authentication (SPA).
- Do not use SSL to communicate with the Allworx server.
- Do not use authentication for the outgoing server.

Note: Most popular email programs enable leaving the messages on the server when transferring to the PC. When using this feature, the user may eventually exceed the inbox quota on the server. To avoid this, Allworx recommends that you enable your email program to:

- Delete all the server email after N days, or
- Delete the email when the user deletes it on the PC.

15.2.3 IMAP Client

IMAP synchronizes email so that users can access an account from multiple locations. Enable the IMAP protocol in the **Network** > **Configuration** > **Modify** page. In addition, the port number and maximum number of connections can be set on the **Servers** > **Email** > **Modify** page.

Note: Enabling the IMAP protocol requires installing a Mobile Link Feature Key on the Allworx server.

Configure each user's PC email application so it can send and receive messages from the Allworx server. The precise details depend on the application but here is the required server information:

- Enter the IP address of the Allworx server's LAN TCP/IP Address (from the Network > Configuration > Modify page) as the incoming IMAP server address.
- Enter the same address as the outgoing SMTP server address.
- Enter the Allworx login name and password for the user as the IMAP user and password.
- Do not use Secure Password Authentication (SPA).
- Do not use SSL to communicate with the Allworx server.
- Do not use authentication for the outgoing server.

Access Examples

Example 1

Requirements	Tom (login name tom) does not expect to get email at his Allworx server address, but instead uses an external email account (tom@yahoo.com). His Allworx server voicemail should be sent to the external email account, but should also be available from his phone.
Configuration	Set up an Allworx server Message Alias for Tom to forward all his messages to his external email account as well as keep a copy on the Allworx server. Create a new message alias such that: Set the email Alias to tom. Set members to tom and tom@yahoo.com.
Commentary	Tom will use his phone to delete old voicemail messages. If any email is sent to his Allworx server account, it will be forwarded to his external account, leaving a copy on the Allworx server. If email accumulates on the server, he will need to periodically connect with a POP email client to delete the old email messages.

Example 2

Requirements	Tom is a remote user of the system and does not have a phone. His extension is configured to send all calls directly to his voicemail. He does not want to call in to get his voicemail, but instead wants all email and voicemail messages to be sent directly to his external email account (tom@yahoo.com).
Configuration	Set up an Allworx server Message Alias for Tom to forward all his messages to his external email account. Create a new message alias such that: Email Alias is set to tom. Members is set to tom@yahoo.com.
Commentary	Tom will get all his email and voicemail messages using his external email account. Since the system deletes the messages off the server after forwarding, he does not need to periodically delete anything.

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Example 3

Requirements	Tom will use the Allworx server for his email. He wants to use his phone to listen to voicemail messages, but does not want them sent to his email account.
Configuration	Set up Tom's Allworx server POP3 Mail Transfers configuration to transfer only email messages. Set up Tom's PC email application to POP email off the Allworx server without leaving a copy on the server.
Commentary	Tom's email messages will be deleted off the server as soon as they are POP'd to his PC's email application. Voicemail messages will be kept on the server until he deletes them via his phone.

Example 4

Requirements	Tom will use the Allworx server for his email. He wants to use his phone to listen to voicemail messages and wants those messages sent to his email account as well.
Configuration	Set up Tom's Allworx server POP3 Mail Transfers configuration to transfer both email and voicemail messages (the default). Set up Tom's PC's email application to POP email off the Allworx server while leaving a copy on the server until he deletes the message on his PC.
Commentary	Tom will be able to listen to his voicemail messages on his phone or on his PC (via email). If he deletes a voicemail message using his phone, will not be deleted on his PC. However, if he deletes a voicemail from his PC, it will be deleted from the server, making it no longer available on his phone. He will have to periodically delete messages from his PC so that he doesn't exceed his message quota on the server.

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16 Backing up and Restoring Data

It is critical to back up the Allworx server frequently. In the event of a server failure, restore the system from the backup. Set up the Allworx Application to create the backup as frequently as needed, including daily backups. Take a few minutes to assess how much data you would be willing to lose in case you need to restore the system from a backup. Perform backups before updating system software or whenever making configuration changes.

Server backups are set up for restoring the entire Allworx server disk. It is not possible to restore only a particular file.

The Allworx Server initiates backups. The Server sends its backup data to a PC for storage. The backup PC must be running the Allworx OfficeSafe application and the server must have a network path to the PC.

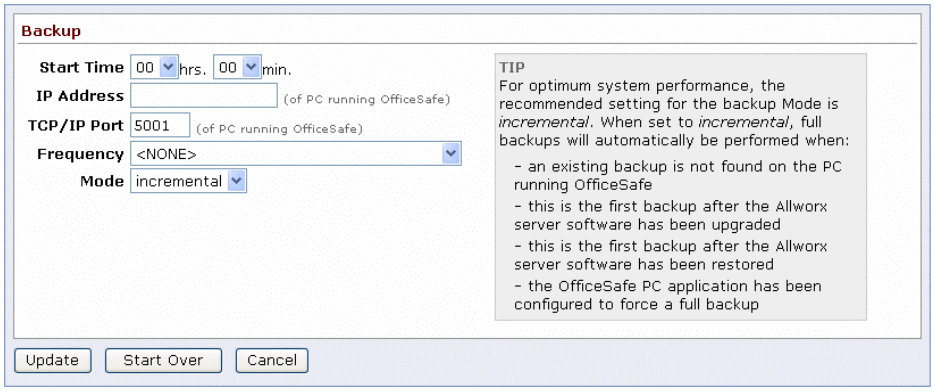
There are two generations of the OfficeSafe application, OfficeSafe 5 and OfficeSafe 6/7. Allworx recommends OfficeSafe 7. Backup files created by OfficeSafe 5 are not compatible with OfficeSafe 7. If upgrading the OfficeSafe application on your service PCs from version 5 to version 6, make new backups of all servers, as soon as possible. The Allworx Administration Guide provides Instructions for using OfficeSafe 5 for server software versions 7.4 and lower. Those publications are available on the Allworx Partner Portal (www.allworxportal.com). For instructions on using OfficeSafe 7, download the Allworx OfficeSafe 7 Operations Guide from the Portal.

16.1 Configuring Backups on the Allworx Server

The Allworx Server Administrator can initiate immediate, one-time backups or schedule the backups to run periodically.

To schedule periodic backups:

1. Navigate to **Maintenance** > **Backup** > **Modify**.


Backup
Start Time 00 hrs. 00 min.
IP Address
(of PC running OfficeSafe)
TCP/IP Port 5001
(of PC running OfficeSafe)
Frequency <NONE>
Mode incremental
TIP
For optimum system performance, the recommended setting for the backup Mode is incremental. When set to incremental, full backups will automatically be performed when:
- an existing backup is not found on the PC running OfficeSafe
- this is the first backup after the Allworx server software has been upgraded
- this is the first backup after the Allworx server software has been restored
- the OfficeSafe PC application has been configured to force a full backup
Update
Start Over
Cancel

2. Set the Backup Start Time to have the backup performed automatically at the appointed time of the day.

3. Set the IP Address and the TCP/IP Port to be the same as those of the PC running OfficeSafe. In OfficeSafe 7, obtain these values from the OfficeSafe under **Tools** > **Options** > **Network**.

4. Select the Backup Frequency from the drop-down list.

5. Set the Backup Mode to Full or Incremental.

   Full: Includes all servers in every backup.

   Incremental: Includes only the changes to the server data since the most recent Full backup and merges them with previous backup data. This backup mode is helpful to speed the duration of each backup by reducing the amount of transmitted data that to the backup PC during every backup.

6. Click **Update** to save the backup settings and return to the backup screen. Backups begin at the Start Time on each day based on the Frequency setting.

Tips about backups:

- After configuring the backup settings, you can use the Backup Now button to initiate a backup out of the normal periodic backup period.
- The OfficeSafe application Current Status and Activity Log displays the progress of the backup process. When the backup is completed, the Current Status state will be Idle and the Activity Log displays "Saving backup completed successfully."
- Incremental backups only update an existing backup image. Archiving multiple backups in a rolling backup history window requires full backups.

16.2 How to Restore Data Using OfficeSafe 7

Restore the data while the Allworx server is in Safe Mode. While in Safe Mode, the server uses the factory default IP address (192.168.2.254) with DHCP enabled to avoid IP address conflicts on the network. Allworx recommends unplugging all the LAN connections and to only plug in the OfficeSafe PC used for configuring the restore.

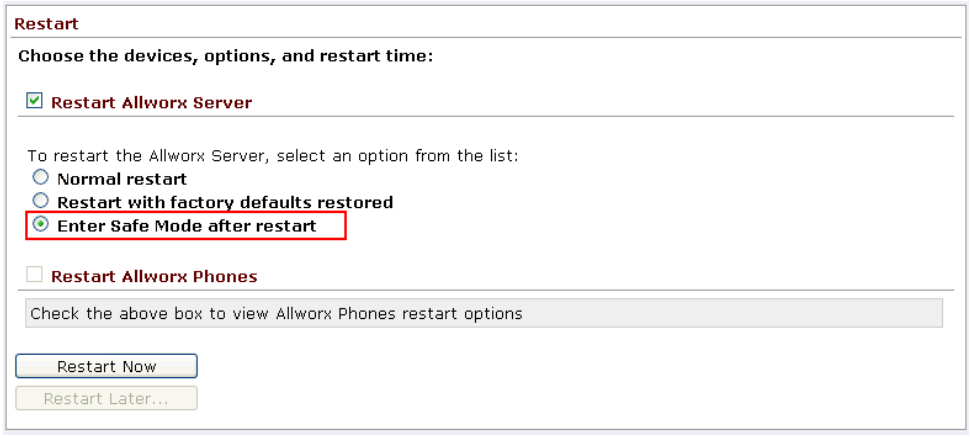
The Allworx server initiates Restores in Safe Mode and requires connecting the PC providing the backup to the server's LAN and running the OfficeSafe application.

To perform a restore:

1. Restart the Allworx server into Safe Mode.

   Do this via the Admin page of the server or by forcing the system into Safe Mode via the front panel of the unit. The method used to force entry into Safe Mode via the front panel varies by product model. Consult the installation or troubleshooting guides for your specific product model for more details. The procedure for restarting in Safe Mode from the server application is the same for all products.

2. Navigate to **Maintenance** > **Restart** page on the web administration interface.


Restart
Choose the devices, options, and restart time:
Restart Allworx Server
To restart the Allworx Server, select an option from the list:
Normal restart
Restart with factory defaults restored
Enter Safe Mode after restart
Restart Allworx Phones
Check the above box to view Allworx Phones restart options
Restart Now
Restart Later...

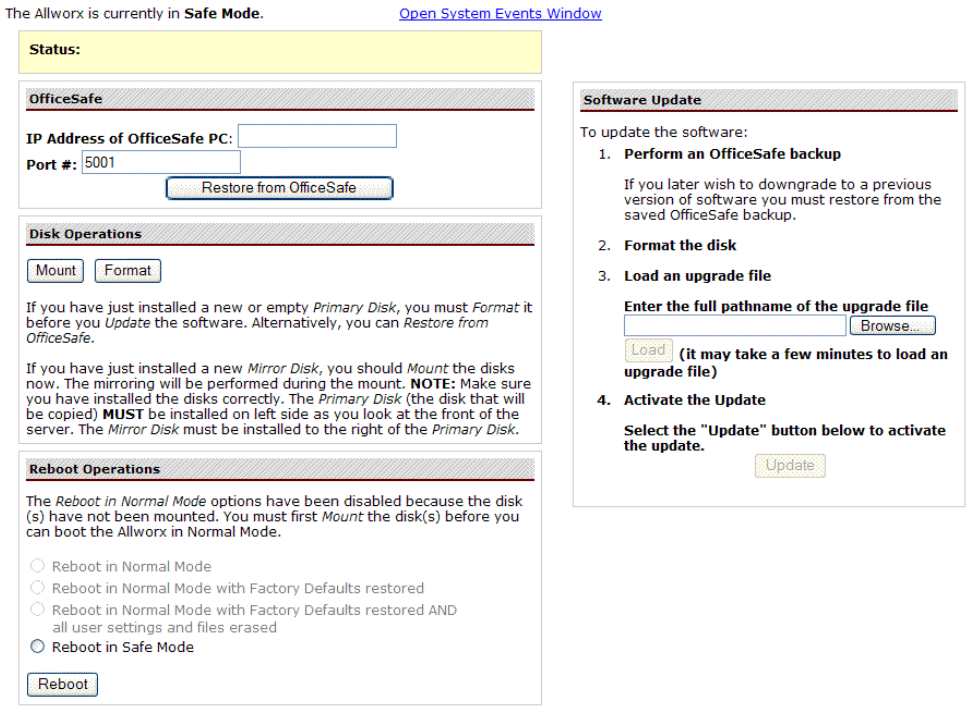
3. Check the box for Restart Allworx Server.

4. Select Enter Safe Mode after restart.

5. Click Restart Now.

6. Type SAFEMODE into the field on the pop-up window. The Allworx server powers down and then powers back up in Safe Mode.

   Once the system powers up into Safe Mode, you will be able to access the Safe Mode web page and you should see a screen similar to the following:


The Allworx is currently in Safe Mode.
Open System Events Window
Status:
OfficeSafe
IP Address of OfficeSafe PC:
Port #: 5001
Restore from OfficeSafe
Disk Operations
Mount
Format
If you have just installed a new or empty Primary Disk, you must Format it before you Update the software. Alternatively, you can Restore from OfficeSafe.
If you have just installed a new Mirror Disk, you should Mount the disks now. The mirroring will be performed during the mount. NOTE: Make sure you have installed the disks correctly. The Primary Disk (the disk that will be copied) MUST be installed on left side as you look at the front of the server. The Mirror Disk must be installed to the right of the Primary Disk.
Reboot Operations
The Reboot in Normal Mode options have been disabled because the disk (s) have not been mounted. You must first Mount the disk(s) before you can boot the Allworx in Normal Mode.
Reboot in Normal Mode
Reboot in Normal Mode with Factory Defaults restored
Reboot in Normal Mode with Factory Defaults restored AND all user settings and files erased
Reboot in Safe Mode
Reboot
Software Update
To update the software:
1. Perform an OfficeSafe backup
If you later wish to downgrade to a previous version of software you must restore from the saved OfficeSafe backup.
2. Format the disk
3. Load an upgrade file
Enter the full pathname of the upgrade file
Browse...
Load
(it may take a few minutes to load an upgrade file)
4. Activate the Update
Select the "Update" button below to activate the update.
Update

7. Locate the OfficeSafe section of the screen; enter the IP Address of OfficeSafe PC plugged into the server's LAN port.

8. Select **Restore** from OfficeSafe.

9. Click **Accept** on the Confirm Restore Request dialog box to begin the restore.

   Depending on the size of the backup data (and the performance of your network and OfficeSafe PC), it may take several minutes or perhaps over an hour for the backup to be restored if there are several gigabytes of data to recover. You will see a "Restore was successful" message in the Status pane on the Safe Mode page when the operation completes.

10. Click **Reboot** in Normal Mode and select the Reboot button.

Caution: Do NOT select Reboot the Allworx server in Normal Mode with Factory Defaults restored. This will cause your restored settings to be lost during the reboot. If you do this by accident, you will want to start the entire restore operation over again.

11. Reconnect your LAN devices and log in to the server after the Allworx server has restarted.

12. Verify that the data restores successfully.

16.3 Server-to-Server Backup and Restore

Backup and restore can be done from one server to another. This enables a standard backup image to be loaded onto multiple servers to replicate an existing server. Using the procedure described above, simply perform a backup from one server and then use this backup to perform a restore onto a different server.

17 Remote Allworx Phones and Port Expanders

A remote device is a phone or port expander on a different Local Area Network (LAN) than the Allworx server. For example, the Allworx server is at the company's main office but an employee has an office phone at home. The Allworx Server Administrator can configure the system so that calls to and from that phone work just as though the employee was at the company's main office. Similarly, the Allworx Server Administrator can configure analog phones and CO lines on a remote port expander to seamlessly integrate into the server's network and dial plan.

Refer to General Network Configuration Requirements on page 27 before setting up Remote Allworx devices.

Caution: Correct routing of 911 emergency calls for remote Allworx phones and analog handsets attached to remote Allworx Port Expanders cannot be guaranteed. Do not configure remote handsets if using to place 911 calls.

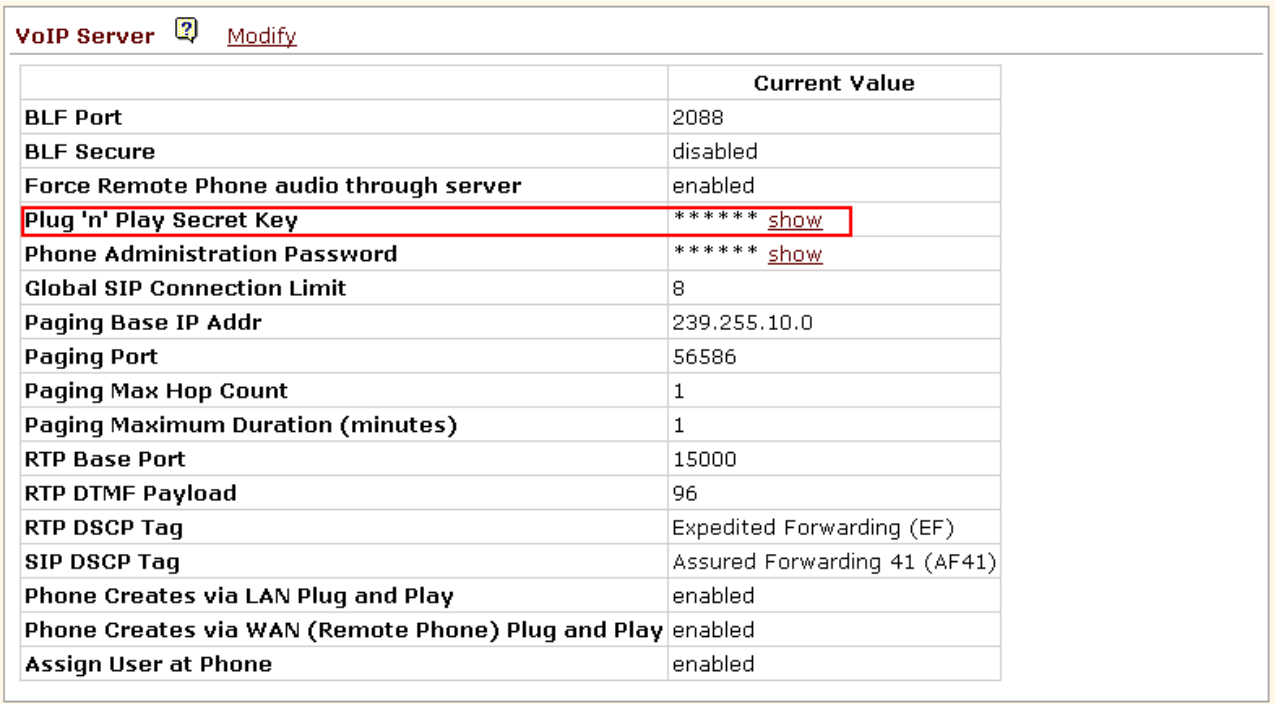
Caution: If there is an interruption between the network connection between the Port Expander and the Allworx server, regular use of the Port Expander's FXO and FXS ports will not be possible. The only option for placing calls through a Port Expander that does not have a functional network connection to its Allworx server is to plug an analog phone into the Power Fail port. The CO line connected to FXO port 1 routes the calls placed using this phone. No other ports are functional.

17.1 Setting Up Remote Allworx Devices

Configuring a remote phone or port expander requires setting two configuration parameters on the device.

1. Boot Server IP. This is the IP address of the Allworx server's WAN port that can be obtained from the server's WAN TCP/IP Address parameter on the **Network** > **Configuration** page. However, if the Allworx server network mode is set to LAN Host, then this value will be the Public IP Address parameter on the **Network** > **Configuration** page.

2. Plug 'n' Play Secret Key. This key is displayed on the **Servers** > **VoIP** page on the server:



VoIP Server Modify

	Current Value
BLF Port	2088
BLF Secure	disabled
Force Remote Phone audio through server	enabled
Plug 'n' Play Secret Key	****** show
Phone Administration Password	****** show
Global SIP Connection Limit	8
Paging Base IP Addr	239.255.10.0
Paging Port	56586
Paging Max Hop Count	1
Paging Maximum Duration (minutes)	1
RTP Base Port	15000
RTP DTMF Payload	96
RTP DSCP Tag	Expedited Forwarding (EF)
SIP DSCP Tag	Assured Forwarding 41 (AF41)
Phone Creates via LAN Plug and Play	enabled
Phone Creates via WAN (Remote Phone) Plug and Play	enabled
Assign User at Phone	enabled

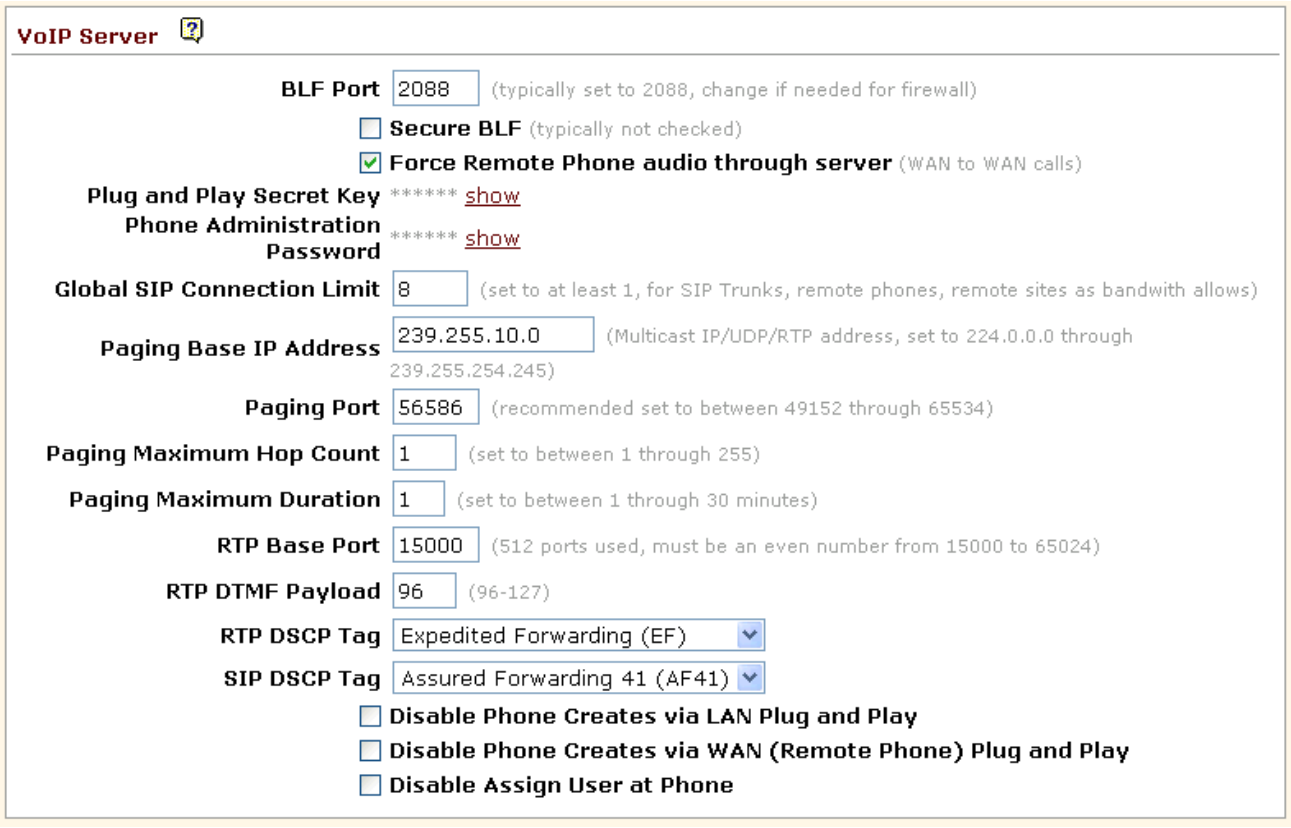
To enter the Boot Server IP and Plug 'n' Play Secret Key into the phone, press the Config softkey and choose the Network Settings menu. To enter the information into an Allworx PX 6/2 Expander, enter Config Mode. See the Allworx PX 6/2 Expander Installation Guide for more information.

17.1.1 Phone or Port Expander behind a 3rd-Party Firewall

Remote phones and port expanders usually work well, even if they are behind a firewall. There are several exceptions, each of which requires additional configuration steps. This document describes the steps below.

Avoid most problems with firewalls by routing remote audio traffic through the server. By default, all audio traffic from remote phones and port expanders runs through the Allworx server. Although this avoids problems, it uses up bandwidth of the network connection to the server. When calls to and from remote devices go back out over SIP trunks or over the internet to other remote devices, the bandwidth usage is 180 Kbytes per call, double that of a regular incoming call.

This traffic can degrade the audio quality of calls that use the Internet. However, there is a server setting that can reduces the effect by enabling audio between devices to go directly from one to the other, rather than through the server. The setting is Force Remote Phone audio through server which can be found on the **Servers** > **VoIP** page. Disabling it will reduce server bandwidth usage. However, if doing this and the phone or port expander is behind a firewall, some configuration of the firewall may be required.


VoIP Server
BLF Port 2088 (typically set to 2088, change if needed for firewall)
Secure BLF (typically not checked)
Force Remote Phone audio through server (WAN to WAN calls)
Plug and Play Secret Key ****** show
Phone Administration Password ****** show
Global SIP Connection Limit 8 (set to at least 1, for SIP Trunks, remote phones, remote sites as bandwith allows)
Paging Base IP Address 239.255.10.0 (Multicast IP/UDP/RTP address, set to 224.0.0.0 through 239.255.254.245)
Paging Port 56586 (recommended set to between 49152 through 65534)
Paging Maximum Hop Count 1 (set to between 1 through 255)
Paging Maximum Duration 1 (set to between 1 through 30 minutes)
RTP Base Port 15000 (512 ports used, must be an even number from 15000 to 65024)
RTP DTMF Payload 96 (96-127)
RTP DSCP Tag Expedited Forwarding (EF)
SIP DSCP Tag Assured Forwarding 41 (AF41)
Disable Phone Creates via LAN Plug and Play
Disable Phone Creates via WAN (Remote Phone) Plug and Play
Disable Assign User at Phone

The following sections describe some common configurations and solutions to potential problems.

17.1.2 Difficulty Connecting Calls

If the remote device does not register with the server or if calls to and from it cannot be connected, settings on the firewall and the phone or port expander may have to be changed to enable communications through the firewall. Perform the following steps on the handset (using soft keys) or port expander:

1. Go to **Config** > **Network Settings** menu for phones. Go to Config Mode page for port expanders. Change the following settings:

   - DHCP – Disabled
   - Remote Plug 'n' Play key – Set according to the procedure in, Phone or Port Expander behind a 3rd-Party Firewall on page144.
   - Boot Server IP – Set according to the procedure in, Phone or Port Expander behind a 3rd-Party Firewall on page144.
   - Phone/Port Expander IP – Choose an address that is consistent with the remote site's network.
   - Netmask IP – Network Mask of the remote site's network.
   - Gateway IP – Gateway IP of the remote site's network.

2. Go to the Server Admin page. For phones, go to **Phone System** > **Handsets**. Create a Handset Preference Group for the remote phone with the adjusted RTP port range; see Handset Preference Groups on page 71.

   For port expanders, go to **Network** > **Port Expanders** and click on port expander Description.

3. Set the RTP port range for the phone or port expander to 16384 or 16393.

4. Forward the required IP ports through the Firewall at the remote site, per the table below:

Port Type	WAN	LAN	Protocol
BLF	2088	2088	UDP
SIP	5060	5060	UDP
RTP	16384 - 16393	16384 - 16393	UDP

17.1.3 Multiple Remote Devices behind the Same Firewall

If there is more than one remote Allworx device behind a firewall, change the settings on the firewall and the phone or port expander to enable this configuration.

1. Go to **Config** > **Network Settings** menu for phones. Go to Config Mode page for port expanders. Change the following settings:

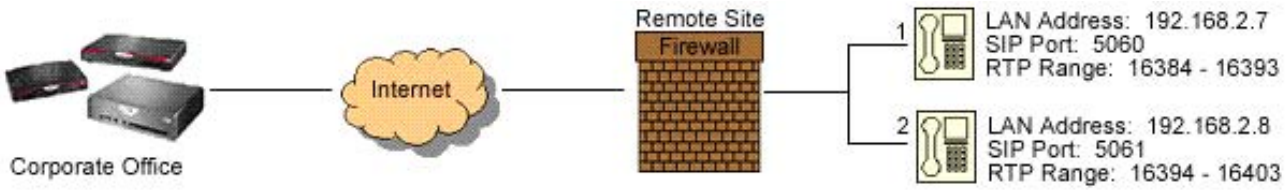
   - DHCP – Disabled
   - Remote Plug 'n' Play key – Set according to the procedure in, Phone or Port Expander behind a 3rd-Party Firewall on page144.
   - Boot Server IP – Set according to the procedure in, Phone or Port Expander behind a 3rd-Party Firewall on page144.
   - Phone/Port Expander IP – Choose an address that is consistent with the remote site's network.
   - Netmask IP – Network Mask of the remote site's network.
   - Gateway IP – Gateway IP of the remote site's network.

2. Configure VoIP settings for the phones and/or Port Expanders.

   For phones, navigate to **PHONE SYSTEM** > **Handsets** and create a different Handset Preference Group for each remote phone.

   For port expanders, go to **Network** > **Port Expanders** and click on the port expander Description. Allocate 10 ports for each device in the standard range (e.g. phone1: 16384 to 16393, phone2: 16394 to 16403). Choose a different SIP port for each device, starting at 5060 (e.g. phone1: 5060, phone2: 5061).

3. Forward the required IP ports through the firewall at the remote site, per the table below.



Port Type	Global	Local	Protocol	IP Address
BLF	2088	2088	UDP	192.168.2.7
SIP	5060	5060	UDP	192.168.2.7
SIP	5061	5061	UDP	169.168.2.8
RTP	16384 - 16393	16384 - 16393	UDP	192.168.2.7
RTP	16394 - 16403	16394 - 16403	UDP	192.168.2.8

Note: Map the BLF port for one of the remote devices. The device that gets the BLF messages from the server will forward the BLF information to every other Allworx device in that subnet.

17.1.4 Phones at Different Remote Sites, Each with a Firewall

This case is very similar to Multiple Remote Devices behind the Same Firewall on page 146. The difference is doing the mappings on each site's firewall. Be sure to map the correct RTP port range for the device that is on the configured firewall. In addition, map the BLF port (2088) for one device on each firewall.

17.1.5 Remote Phones Cannot Receive Pages

While regular calling and intercom calling works fine, paging remote phones does not. Sending pages from the remote phone works but the zoned nor hear the overhead pages at the remote phone.

In order to enable paging to a remote phone, a VPN must be set up between the Allworx server and the remote phone. Below describes the Allworx server settings changes. This document does not cover the steps for configuring the site's firewall for the VPN because of the variations.

On the **Servers** > **VoIP** > **Modify** Server page of the Allworx server, there are three parameters used to configure where the server transmits zoned pages:

- Paging Base IP Address – This is the multicast base IP address used by the system. Each paging zone uses the base address plus an offset. Zone 0 (the overhead zone), uses an offset of 0, zone 1 uses an offset of 1, etc. For example, if the base address were set to 239.255.10.0, then zone 2 would use multicast IP address 239.255.10.2.
- Paging Port – This is the UDP port number that the packets are sent to. All zones use the same port number, but each has its own multicast IP address.
- Paging Max Hop Count – This value controls the time-to-live (TTL) count in the IP header of all paging UDP/RTP frames. Typically, this value is set to 1 so that the packet will not be sent beyond the local subnet. However, if you have multiple subnets with phones on them, this value will need to be increased.

18 Adding Extensions

18.1 User and System Extensions

The **Phone System** > **Extensions** page displays User and System extensions. Special purpose routing of calls to these extensions is possible.

Special Purpose Routing	Descriptions
Presence Specific Routing	When on vacation, forward the call directly to voicemail (User extensions).
Multiple Destinations	Ring multiple phones simultaneously.
Multiple Connection Attempts	Rings a series of phones when the primary phone is not answered.
On Busy Routing	Rings alternate phone(s) when the line is busy (User extensions).
Follow-Me-Anywhere	Forward the call to a cell phone or home phone.
Caller ID Based Routing	Separate call route that is dependent on the Caller ID of the incoming call (User extensions).
Hot Desk Routing	Route the call to the logged-in phone when a user logs into a shared phone.
Business Schedule Routing	Follow different routes when the designated Business Schedule is in Day mode vs. Night mode (System extensions).

Different call routes can be established for each of the seven (7) user presences. In Office, At A Meeting, On Vacation, On Business Trip, At Home, Away, and Busy can be directed to go to different destinations.

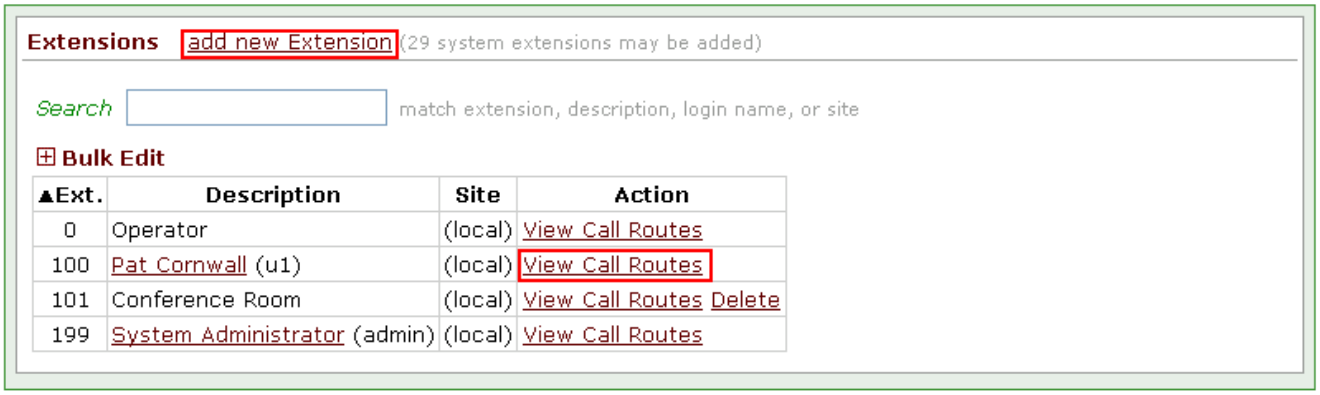
The System Administrator can configure permissions for users to define the routing of their extensions using the My Allworx Manager page by enabling the corresponding checkbox on the **Business** > **Users** > **Modify** page. The following sections describe how to define the routing of an extension, starting with basic routing.

18.2 Basic Routing

The building blocks of a call route are the Connection Attempts, Destinations, and Finally route. In the typical call route, there is one Connection Attempt and the Finally route.

1. Log into the Admin page of the Allworx System and navigate to the **Phone System** > **Extensions** page.

BETA



2. To create System extensions:

   a. Click the **add new Extension** link (See figure above).

   b. Enter the desired number for the system extension. Click the show available link to view a table of available extensions.

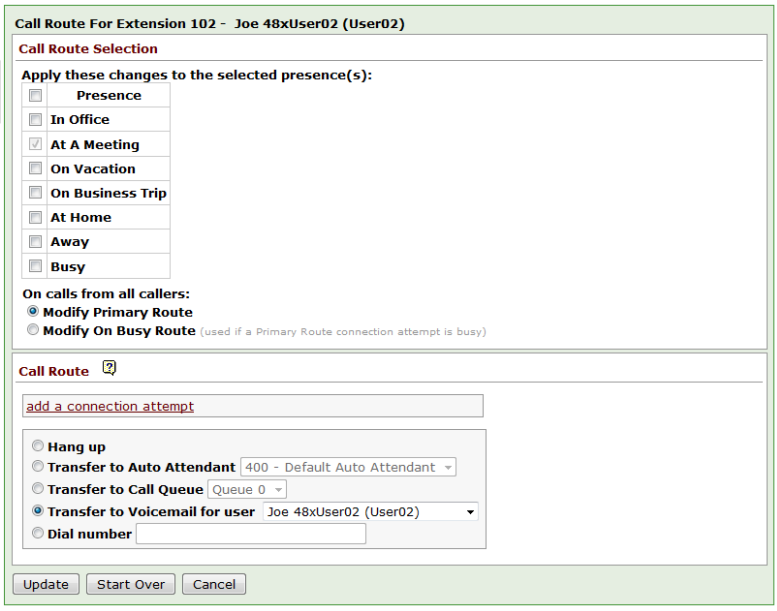
   c. Enter a description for the extension.

   d. Proceed to Step 3e.

3. To configure a User extension:

   a. Click the **View Call Routes** link for a user (See figure above). The View Call Route page displays.

   b. Click the **Modify** link next to a presence to update the call route. The Modify Call Route page displays.



c. Locate the Call Route Selection, and check the boxes for Apply these changes to the selected presence(s). The system applies any saved changes to all the selected presences.

d. Locate the On calls from callers section and select the radio button to Modify Primary Route or Modify On Busy Route.

On Busy Route: To avoid having callers hear a busy signal when calling a User extension, configure an alternative On Busy call route.

e. In the Call Route section, if a connection has not yet been added, click the **add a connection attempt link**. If the First connection attempt is already established, skip the next step, if desired.

4. Choose the desired destination, number of rings and ring tone. The drop-down menu that displays in the First connection attempt section provides a list of Handsets, User Extensions, Call Monitors, and the Follow Me option.

Note: The differences between the ring tone selections are limited. Achieve additional variety by selecting different ring tone families. Select the ring tone family within the on-phone configuration menu. See the Phone Guides for each phone model for more information.

5. Configure the Finally route, which is the desired ending for an unanswered call.

For User extensions, any changes made to the call route of one presence can be assigned to the other presences by checking the **apply these changes to all of my presences** checkbox.

6. Click the **Update** button at the bottom of the page to save changes.

18.3 Multiple Destinations

1. To ring several phones at once, repeat the Basic Routing procedure, up to step 5. .

2. Click the **add a destination** link under the desired connection attempt. This will create another destination drop-down menu.

3. Select the desired destination, number of rings and ring tone. The drop-down menu that displays in the Second connection attempt section provides a list of Handsets, User Extensions, Call Monitors, and the Follow Me option.

4. Pull down the menu and choose an additional phone to ring along with the previously chosen phone.

5. Repeat the steps above to add more phones to ring simultaneously for the connection attempt.

6. Click **Update** at the bottom of the page to save changes.

BETA

18.4 Multiple Connection Attempts

If alternate phones should ring when the handset(s) in the First connection attempt are not answered, create additional connection attempts to receive the calls. Repeat the Basic Routing procedure and the Ring Several Phones at Once (if applicable), up to step 5. .

1. Click on the **add another connection attempt** link. This will create another connection attempt section (e.g. Second, Third, etc) below the First connection attempt section,

2. Configure the connection attempt using the options.

3. Click **Update** at the bottom of the page to save changes.

18.5 On Busy Routing

To avoid having callers hear a busy signal when calling a User extension, configure an alternative On Busy call route.

Follow the Basic Routing procedure to set up the initial call route for the presence. Once the Extensions page displays, select the **Modify** link of the presence call route.

1. Select the **Modify On Busy Route** radio button.

2. Select the **Use Call Route below**: radio button. A new call route section displays.

3. Set up the call route using the other procedures.

4. Click **Update** at the bottom of the page to save changes.

Note: Create and save (Update button) the primary call route before creating or modifying the On Busy Route. The system ignores additional call attempts when configuring the busy route to use a call route instead of treating a busy as no answer.

18.6 Follow-Me-Anywhere

Users can forward calls to other phones outside of the Allworx System such as cell or home phones. If the recipient does not answer the call, the system directs the call back to the system in order to follow the rest of the configured call route. In following the rest of the call route, unanswered Follow-Me-Anywhere calls may eventually be directed to the Finally route, which permits callers to leave messages in the default voicemail inbox. If having callers leave messages on a personal phone voicemail is preferred, do not use the Follow-Me-Anywhere features. Instead, use the Finally route to direct calls to the cell or home phone by entering the phone number into the Dial number text box.

Note: When an outside phone answers the call, the default is for the recipient to hear a prompt requesting that a '1' be entered to accept the call. However, the Allworx

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Server Administrator can configure user extensions so that Follow-Me-Anywhere calls to their extensions require a Message Center password in order to accept the call. See Chapter 19 Follow-Me-Anywhere for more information.

1. Use the Basic Routing procedure up to step 5. , or a combination of the other procedures, select Follow Me → from the drop-down menu in the connection attempt field.

2. Enter 9† or 78†+PIN (to gain an outside connection) followed by the phone number in the text box that appears to the right.

   Examples†:9+1+aaa-xxx-nnnn, 9+1+xxx-nnnn,

   78+PIN+1+aaa-xxx-nnnn, 78+PIN+xxx-nnnn

3. Select the desired number of rings. The Follow-Me-Anywhere feature requires the recipient to listen to a message and enter a code. Therefore, increment the normal number of rings by at least two in order to give the recipient extra time to answer the call.

4. Click **Update** at the bottom of the page to save changes.

18.7 Caller ID Based Routing

Use the Caller ID of the incoming call to a User extension to determine the call route.

1. Click on the **View Call Routes** link, next to the User extension that is adding a Caller ID-based route (See figure above).

2. Click the **add new Call Route** link next to the presence that is to be configured.

3. Choose the radio button for either external or internal calls.

4. Enter the phone number with area code in the text box, for calls from external numbers or choose the extension from the drop-down menu for calls from internal extensions.

5. Use the other procedures (e.g. Basic Routing) to develop the intended route for the call.

6. Click **Update** at the bottom of the page to save changes.

† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

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18.8 Hot Desk Routing

Hot Desking permits users to log into shared phones, receive their calls on that phone, and place calls with their caller ID. Users can initiate the login using a Hot Desk PFK or by selecting the Hot Desk Login option from the phone's Config menu.

Users can add Hot Desk destinations manually or automatically to user call routes. If none are present when the user Hot Desks into a phone, then Hot Desk destinations are added as the first connection attempt to all Presence call routes.

18.9 Business Schedule Mode Routing

The Allworx Server Administrator can assign system (non-user) Extensions a Business Schedule and configure the extension to follow one call route when the Schedule is in Day Mode and another call route when the Schedule is in Night mode. (See Chapter 25 Business Schedules for more information.

To configure a Business Schedule that defines the Day Mode and Night Mode hours for this System Extension:

Follow the Basic Routing procedure; see Chapter 25 Business Schedules to set up the Day Mode call route for the extension. Once the Extensions page displays, select the View Call Routes link (See Figure 16) for the System (non-user) Extension.

1. Click the **Modify** link in the Extension Information section.
2. Choose the Schedule in the drop-down list that has been configured for routing calls to this extension.
3. Check the **Use different call routes for Day and Night modes** checkbox, and then select the Update button.
4. Click the **Modify** link in the Night mode section. Use the preceding procedures to define the intended route for the extension during Night hours.
5. Click **Update** at the bottom of the page to save changes.

18.10 Changing a User's Presence Setting

18.10.1 Changing Presence via the Web Admin Page

Although users can change their own presence setting, the System Administrator can change a user's presence by going to the **Business** > **Users** page, clicking on the **Modify** link of the user, and changing the User Presence setting

18.10.2 Changing Presence via the My Allworx Manager

1. Open a web browser and enter the Allworx server's LAN IP address into the address field.

   Default: http://192.168.2.254

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2. Click **Login**. An Allworx username and Message Center password are required to again access to the call routing features.

3. Select the My Presence tab.

4. Choose the appropriate presence and then select the Change Presence button.

To change the presence settings on an Allworx IP phone, see the phone User Guide for more information.

To change the presence settings using the Reach Application, see the Reach User Guide for more information.

To change the presence settings using the Allworx Message Center, See the Allworx User Guide for more information.

18.11 Speed Dial Numbers

The system supports 50 three-digit speed dial numbers (*250 through *299) and 1000 five-digit speed dial numbers (*24000 through *24999).

To add a new speed dial number:

1. Navigate to **Phone System** > **Speed Dial**. The Speed Dial Numbers page displays.

2. Click the add **new Speed Dial Number** link. The Speed Dial input page displays.

3. Select a Speed Dial Number from the drop-down list.

4. Type a description in the Description field.

5. Type a number in the Number to Dial field. Use one of the number formats described in the TIP box. If you make a mistake, click the **Start Over** button to clear the fields.

6. Click the **Add** button to save changes. The Speed Dial Numbers page displays.

7. Repeat for any additional speed dial numbers.

To modify an existing speed dial number:

1. Navigate to **Phone System** > **Speed Dial**. The Speed Dial Numbers page displays.

2. Click the **Modify** link in the speed dial number line. The Speed Dial information page displays.

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3. Make the appropriate updates. If you make a mistake, click the **Start Over** button to reset the fields to the original information.

4. Click the **Update** button to save changes.

To delete a speed dial number:

1. Navigate to **Phone System** > **Speed Dial**. The Speed Dial Numbers page displays.

2. Click the **Delete** link in the speed dial number line. The Speed Dial information page displays.

3. Click the the **Delete** button to confirm or the **Cancel** button to abort the deletion. The Speed Dial Numbers page displays.

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19 Follow-Me-Anywhere

Follow-Me-Anywhere Calling enables routing inbound calls to an external number within call routes. If the call is rejected or unanswered then the inbound call will continue along the defined call route. Previously, external numbers were only enabled to be at the termination of the call route (the Finally attempt), which limited the routing destination of the call if the recipient did not answer. (See Follow-Me on page 152 , for more information).

When users receive a Follow-Me-Anywhere call on their external phone (e.g. cell phone, home phone), they hear a prompt that identifies the source of the call and how to accept the call.

To configure the content of the prompt and the acceptance method for user extensions:

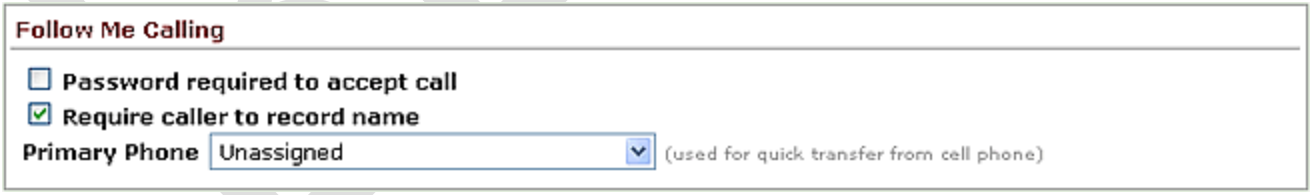
1. Navigate to **Business** > **User** page. Find the user and click the **Modify** link in the action column.

2. Locate the Follow Me Calling section, and check the appropriate check boxes.

   If both checkboxes are checked, the prompt for calls to the user's extension: "Call for (user) from (caller). To accept, enter your password followed by the pound sign."

3. Click **Update** at the bottom of the page to save changes.

Note: System extensions that use Follow-Me-Anywhere will receive the default prompt: "A call is being forwarded to you from an Allworx system. Press one to accept the call."



The recipient of the call can consult another employee or transfer the caller to any extension (user, system or remote site) in the Allworx System.

19.1 Consult

1. Press *# to obtain a dial tone while placing the caller on hold.

2. Dial the extension of the person that is to consult.

3. Press *# to end the consultation and return to the caller.

19.2 Announced (Attended) Transfer

1. Press *# to obtain a dial tone while placing the caller on hold.
2. Dial the extension to transfer the caller is to.
3. Talk to the new recipient.
4. Hang up to complete the transfer.

19.3 Unannounced (Blind) Transfer

1. Press *# to obtain a dial tone while placing the caller on hold.
2. Dial the extension to transfer the caller is to.
3. Immediately hang up to complete the transfer.

19.4 Quick Transfer

While active on a call, the recipient can blind transfer the caller to their primary phone using *7.

To designate a Primary Phone:

1. Navigate to the **Business** > **Users** page. Find the user and click the **Modify** link in the action column.
2. Locate the Follow Me Calling section, and check the appropriate check boxes.
3. Select a handset from the Primary Phone drop down menu under the Follow Me Calling section (See figure above).

   The Primary Phone choice is independent of the user's regular phone assignment and call routing. It can be any phone in the system.
4. Click **Update** at the bottom of the page to save changes.

Note: The consult and transfer features will not work if connecting any of the parties via a SIP Trunk or SIP Gateway.

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20 Voicemail Notification & Escalation Message Alerts

Voicemail Notification & Escalation Message Alerts send SMS text messages to cell phones and/or email addresses when a leaving voice message in a specified voicemail inbox on the Allworx System.

The SMS text messages provide the following information:

- Allworx username associated with the voicemail inbox.
- Caller ID name and number of the caller who left the voicemail (if available).
- Date and time the voicemail inbox received the voicemail.
- Length of the recorded message.
- Current amount of new voicemails in the voicemail inbox.

Note: The SMS text messages are sent via the Allworx SMTP server, which requires a valid network path from the Allworx to the destination mail server through the Internet.

20.1 Notification Mode

Voicemail Notification will send the recipient(s) an alert every time the voicemail inbox receives a new voicemail.

To configure voicemail Notification alerts:

1. Navigate to the **Business** > **Users** page. Find the user and click the **Modify** link in the action column.

2. Locate the Voicemail Notification and Escalation section, and enable the Notification Mode radio button.

   SMS Email Messages – The address of the recipient(s) that are to alert when there is a new message in the voicemail inbox. Only one entry per field, therefore a message alias may be used to send alerts to multiple recipients.

   The following are acceptable entries:

   - Username
   - Message Alias
   - Email address
   - Cell phone number with service provider SMS text message domain (e.g. 7165552000@txt.att.net)

   Note: Service provider domains can be found at: www.notepage.net/smtp.htm (Check with the Service Provider for more information).

3. Click **Update** at the bottom of the page to save changes.

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20.2 Escalation Mode

The Voicemail Escalation feature distributes message alerts repeatedly until meeting a set number of retries or until retrieving any voicemail message. The system organizes recipients into levels so that after a specified number of message alerts are sent to the recipient(s) at one level, the alerts to the recipient(s) at the next highest level begin.

To configure voicemail Escalation alerts:

Navigate to the **Business** > **User** page and enable the **Escalation Mode** radio button.

Option	Description
Level	The order for alerting recipients a caller left a message in the voicemail inbox.
SMS Email Messages	The address of the recipient(s) that are to alert when there is a new message in the voicemail inbox. Only one entry per field, therefore a message alias may be used to send alerts to multiple recipients. The following are acceptable entries: • Username • Message Alias • Email address • Cell phone number with service provider SMS text message domain (e.g. 7165552000@txt.att.net) Note: A list of service provider domains can be found at: www.notepage.net/smtp.htm (Check with the Service Provider for more information).
Notification Period	The time elapsed before sending another SMS message to the recipients identified in the Level option.
Maximum Retries	Maximum number of messages sent to the recipients of the level before the message alerts proceed to the next level of the table. This does not include the initial SMS message. Therefore, the system sends the recipients one more message than the entered value. Note: Escalation message alerts stop after sending the maximum number of messages to the last populated level in the table.
Continue Notifications	Recipients continue to receive message alerts in conjunction with the next level or levels once escalation occurs.

Example:

A doctor's office has an "on call hours" voicemail box. When leaving voicemail messages in this box, the system sends the notification to the assigned doctor to answer after hour emergencies. If the doctor does not retrieve the call within X minutes, the system sends an escalation message to the next set of backup doctors.

21 Key System Behavior

The Allworx Server Administrator can configure the Allworx server and Allworx IP phones to behave like a Key System.

Example Configuration

Requirements	An insurance agent called Best Insurance is provisioned with 3 CO lines. The office is staffed by five employees, each having an Allworx phone. The system will behave like a Key System with a PFK on each phone mapped to each of the CO lines. Using the PFK, each user will be able to monitor and directly answer each of the CO lines. If not answered, an incoming call should ring 6 times before routing to a central (not individual user) voicemail for the office.
Configuration	Create a generic user on the system to receive the central voicemail for the office. Call the user "Best Insurance". Create a system extension to route all incoming calls. Set up the call route so that it has one connection attempt with Key System Ring Delay so the Call Appearance (phone) that will ring 6 times. Configure the call route Finally clause to transfer to voicemail for user "Best Insurance". For each CO line, check the Enable Line Appearance checkbox on the Phone System > Outside Lines > Modify page. Configure the call route for each CO line so all calls go to the created system extension. For each Allworx phone, configure a Line Appearance PFK for each CO line. See Chapter 11 Configuring Allworx IP Phones.

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22 Direct Inward Dialing (DID)

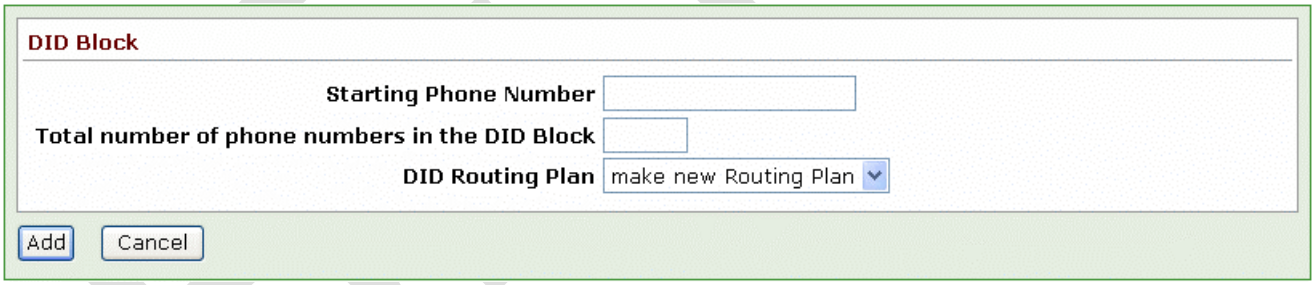
Direct inward dialing (DID) is a service offered by a local telephone company that provides a block of phone numbers for calling into a PBX without requiring a physical line for each number. In cooperation with the PBX, map each number to a PBX extension. Each PBX user has a unique outside number used to ring the user's phone directly, rather than directing the incoming call to an Auto Attendant.

There are three steps to configuring the Allworx server for DID service:

1. Create a DID block.
2. Configure the call routing plan for the DID block.
3. Create a DID line for each DID trunk line plugged into the server.

To create a DID Block:

1. Navigate to **Phone System** > **Outside Lines**.
2. Go to the Direct Inward Dial Blocks section, and click the **add new DID Block** link.



3. Enter the Starting Phone Number and Total number of phone numbers in the DID Block fields as specified by the telephone company.
4. Click **Add** when complete.

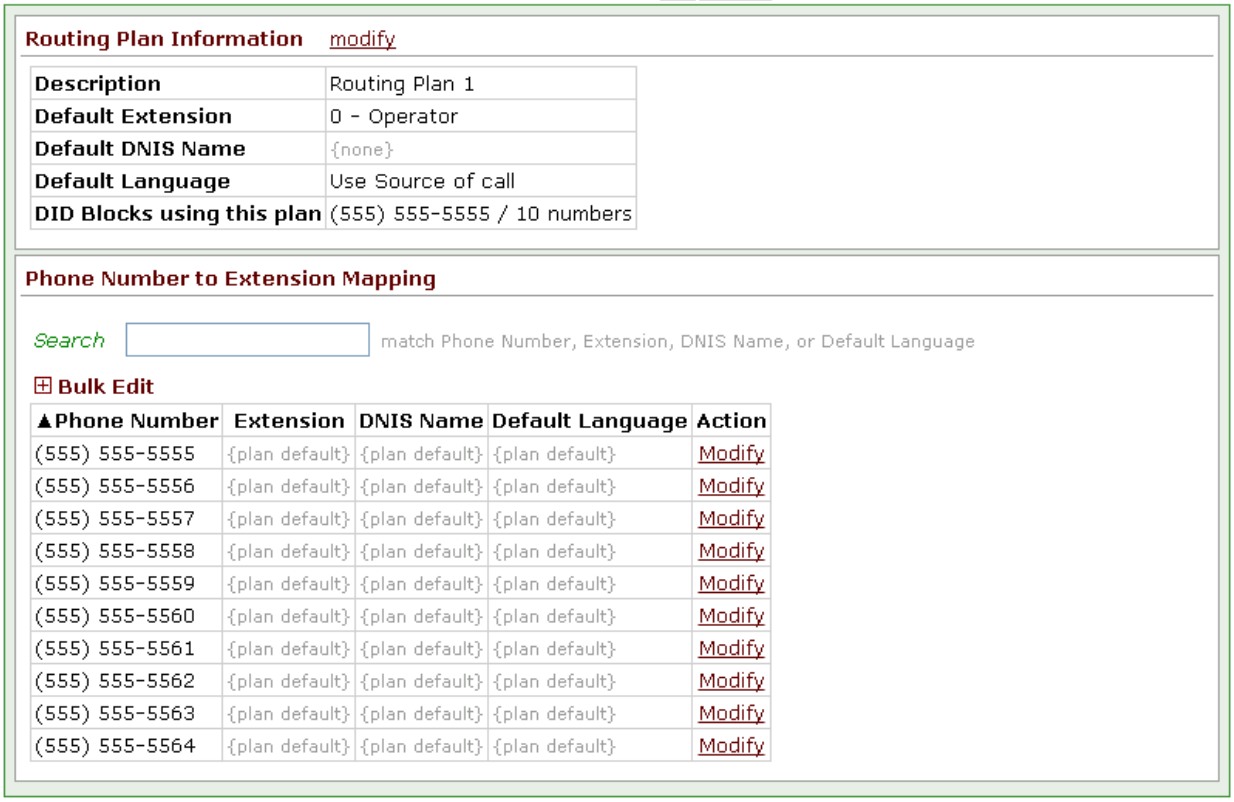
Note: If the site's phone numbers are scattered over a range of numbers, you may create DID blocks for each individual or grouping of phone numbers. However, it is preferable to create a larger DID block that spans multiple DID ranges, even if many of the numbers in the block are not being used. Doing so makes management of the blocks easier. Also, since there is a limit to the number of DID blocks that can be assigned to any outside line (128 blocks per line), combining DID numbers into larger blocks will avoid reaching this limit.

To configure a Call Routing Plan for the DID Block:

1. Create the DID block.

2. Navigate to **Phone System** > **Outside Lines** and look at the Direct Inward Dial Blocks section to find the name of the routing plan associated with the block.

3. Locate the Routing Plan, and click the **Details** link in the action column.



The routing plan specifies a mapping for each DID phone number to an Allworx server extension. The plan also permits entry of a Dialed Number Identification Service (DNIS) name for each phone number. The DNIS name displays on the recipient's Allworx phone. If there is no DNIS name entered, the originally dialed number display on the phone. The system uses the Default Extension as the mapping for any unassigned phone numbers to an extension.

23 Emergency Support

23.1 Emergency Dial Plan

Important: By default, when servers are in the default configuration in PBX mode, users must dial the external line access digit before the emergency phone number (i.e. 9 911), in order to connect an emergency call. The Allworx Server Administrator can configure servers to permit users to dial the emergency number without having to dial the outside line access digit.

To enable direct dialing of emergency numbers:

1. Navigate to **Phone System** > **Dial Plan**.
2. Locate the External Dialing Rules section.
3. Click **Modify** on the table with a Type of Emergency.
4. Check the **Dial Direct** box. Change the Emergency Dialed Number and set the Service Group, if they not correct.
5. Click the **Update** button.

23.2 Emergency Handset Caller ID

The Allworx Server Administrator can assign an Emergency Caller ID (CID) number to each Allworx handset. When dialing an emergency number from the handset, the Emergency CID passes to the emergency call center instead of the normally used CID. For those employees who are not located at the main site, the properly configured Emergency CID will help the emergency call center identify the location of the handset that placed the call.

Caution: Setting Emergency Caller IDs for placing emergency calls on a CO line will not work. The Emergency CID will not override the Caller ID of the CO line.

Caution: If you are using SIP trunks or PRI lines, check with your provider to determine what Caller ID numbers they will accept, if any, or to have them configure additional phone numbers to use as caller IDs for emergency calls. After setting up Emergency Caller ID numbers on the Allworx server, test every number by calling the emergency phone number (e.g. 911). Use a phone that configured to use that caller ID to ensure that the emergency calls are connected, are routed to the correct emergency call center, and the call center can independently determine the location of the handset from the placed call. Be sure to tell the call center that these test calls are non-emergency calls, and that you are testing your phone system.

In order to configure Emergency Caller IDs for specific handsets, define an Emergency Caller ID, and then assign it to the handsets. Give each Emergency CID a Location name and associate each with a Service Group for use when placing an emergency call. When choosing "Use External Dialing Rules" as the Service Group, the system selects the outside line or Service Group based on the area code of the Emergency CID number.

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23.2.1 Add Emergency Caller ID Numbers

To add Emergency Caller ID numbers to the Allworx system:

1. Navigate to **Phone System** > **Emergency CID**.
2. Go to the Emergency Caller ID Numbers section, click the **add new Caller ID Number** link.
3. Enter the Caller ID number and Location in the appropriate fields. Use a descriptive name for the location of the handset(s) that will use this Caller ID.
4. Choose a Service Group from the drop-down list.
5. Select the **Add** button.

Assign the configured Emergency Caller IDs to handsets using any of three different methods: through the server Admin page, through the handset Admin page or from the handset's CONFIG menu. Users can assign A Caller ID/Location to more than one handset.

Note: Assigned Emergency Caller IDs via a phone's Admin page or its CONFIG menu will override the CID number for the handset, if assigned on the server.

From the server Admin page:

1. Navigate to **Phone System** > **Emergency CID**. The page displays all handsets on the system in the table under the Handset Emergency Caller ID Number Assignments section.
2. Click the **Modify** link.
3. Select a Caller ID Number from the drop-down list.
4. Click **Update**. The table will display the Emergency CID, Location and Service Group assigned to the handset.

Note: When assigning an Emergency CID number to a handset from the server's Admin page, the Caller ID number does not display on the phone's Admin page or under the CONFIG menu.

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Emergency Caller ID Numbers add new Caller ID Number

Caller ID Number	Location	Service Group	Action
(315) 597-1111	Mary's House	Verizon (Co)	Modify Delete
(585) 421-3850	Rochester	All Trunk Devices	Modify Delete
(716) 555-1234	Buffalo	Use External Dialing Rules	Modify Delete

Handset Emergency Caller ID Number Assignments

Handset	Caller ID Number	Location	Service Group	Action
000add820020	*Emergency Caller ID not specified*			Modify
Alex Smith	(585) 421-3850	Rochester	All Trunk Devices	Modify
Mary Copper	(315) 597-1111	Mary's House	Verizon (Co)	Modify

From the phone Admin page:

1. Navigate to **Phone System** > **Handsets**. Locate the specific handset, and click the link with the IP address. This opens an Allworx System Administration window.
2. Log onto the handset Admin page.
3. Navigate to the **Configuration** > **Preferences** page and then select the **Modify** link. Locate the Emergency Caller ID Number, and enter a new or existing CID number in field
4. Click **Update**. A phone reboot is required to display the changes on the server's Admin page.

From the handset CONFIG menu:

1. Press the CONFIG softkey, and use the UP/DOWN Arrow buttons to scroll through the menu.
2. Highlight PREFERENCES and press the SELECT button.
3. Use the UP/DOWN ARROW buttons to select the Emergency Caller ID Number option and press the SELECT button.
4. Enter the Emergency Caller ID number and press the SELECT button
5. Press the EXIT soft key repeatedly until Save to Flash displays.
6. Press the YES soft key.
7. Reboot the phone

23.2.2 Emergency CID displayed on Admin page

When adding a new Emergency Caller ID number via a phone's Admin page or CONFIG menu, the system creates an Emergency CID entry in the Emergency Caller ID Numbers table on the server's Admin page and displays in green text. Navigate to **Phone System** > **Emergency CID** to see if the Emergency CID was set on any handsets. The system uses the Description of the handset as the Location and the Service Group is set to 'All Trunk Devices'.

Select the show details link to see the previously assigned Emergency CID (if any) for each handset. To return to the previous Emergency CID assigned, delete the Caller ID number using the phone's Admin page or CONFIG menu.

Emergency Caller ID Numbers add new Caller ID Number

Caller ID Number	Location	Service Group	Action
(315) 597-1111	Mary's House	Verizon (Co)	Modify Delete
(585) 421-3850	Rochester	All Trunk Devices	Modify Delete
(585) 421-5555	Alex Smith	All Trunk Devices	Modify Delete
(716) 555-1234	Buffalo	Use External Dialing Rules	Modify Delete

Handset Emergency Caller ID Number Assignments hide details

Numbers in **bold green** have been specified at the handset.

Handset	Caller ID Number	Location	Service Group	Action
000add820020	*Emergency Caller ID not specified*			Modify
Alex Smith	**(585) 421-5555** (585) 421-3850	Alex Smith	All Trunk Devices	Modify
Mary Copper	(315) 597-1111	Mary's House	Verizon (Co)	Modify

23.3 Delete an Emergency Caller ID

Users can delete Emergency CID numbers by clicking on the Delete links. However, users cannot delete Emergency CIDs that have handsets assigned to them. Therefore, assign all handsets to another CID prior to deletion.

23.4 Emergency Alerts

The 911 Alert feature sends audible and visual alerts to designated handsets immediately after an emergency call is made from any local or remote handset. Additionally, the Allworx system supports email and SMS message notification of emergency calls.

To configure handsets to receive 911 alerts, assign an Emergency Alert PFK. When placing an emergency call from a handset on the system, handsets with the PFK will produce an audible beeping and display:

- Owner of the handset which placed the call
- Station number of the handset the call originated from
- Date / time of the call

Status	Pressing the PFK
Active Alert	Acknowledges the alert, silences the audible beep and removes the alert information from the display screen.
Inactive Alert	Retrieve information of the last alert stored on the handset.
Rebooting the handset	Removes stored alert details from the handset.

The Allworx system will automatically acknowledge active alerts by silencing the beeping on all handsets after 10 minutes and by removing alert information from each handset display screen after 60 minutes. If additional emergency calls are placed from other handsets within 15 seconds, the new alerts will be ignored. The next emergency call placed after the 15 second time period will be stored on the handset and will be displayed once the user or system acknowledges the first alert. The user can acknowledge an alert by pressing the PFK or CLEAR soft key.

Emergency alerts will supersede any handset functionality (e.g. placing/receiving a call, logged into message center), except when the user of the handset is in an admin menu (e.g. viewing directory, CONFIG menu settings, changing presence setting). In this case, the PFK will blink. Once the user exits the menu screens, the hand propagates the alert's audible beeping and information.

Note: Calls do not disconnect when an Emergency alert is propagated to the handset.

23.5 Emergency Call Email Notifications

The Allworx Server Administrator can configure the Allworx system to send out text notifications to email and SMS accounts when an emergency call is placed. The notifications include the user assigned to the handset (station number, for unowned handsets) and the date / time of the call.

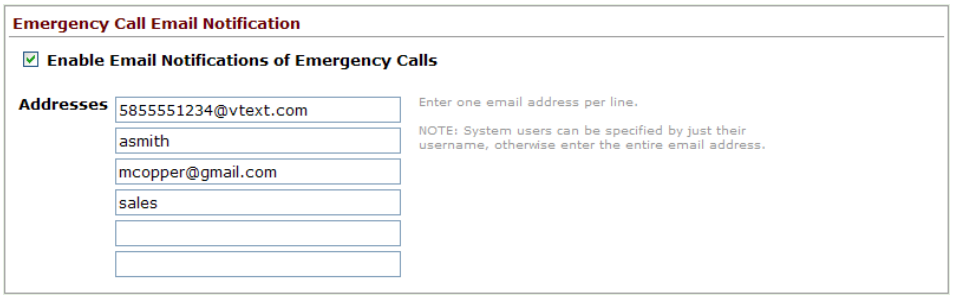
To enable Emergency Call Email Notifications:

1. Navigate to the **Phone System** > **Dial Plan** page.

2. Go to the External Dialing Rules section, and then go to Emergency Call Email Notifications are not enabled.

3. Click the **Modify** link, and the Modify Email Emergency Call Notification page displays.

4. Check the Enable Email Notifications of Emergency Calls, and then enter the recipients of the notifications in the text fields. Valid entries include username, message alias, email address, and SMS address (cell number and domain).


Emergency Call Email Notification
Enable Email Notifications of Emergency Calls
Addresses
5855551234@vtext.com
asmith
mcopper@gmail.com
sales
Enter one email address per line.
NOTE: System users can be specified by just their username, otherwise enter the entire email address.

5. Click **Update**. The Dial Plan displays

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24 Call Supervision

Accomplish the Call Supervision through a PFK configured on the supervisor's Allworx phone. Program the PFK for Barge in, Silent Monitor or Whisper Mode. In addition, enable the agent's phone for supervision by modifying the Call Supervision setting of the agent's Handset Preference Group.

To initiate supervision, the supervisor presses the Call Supervision PFK and enters the agent's extension. If the supervisor has a BLF PFK for the agent, press the Call Supervision PFK followed by the BLF PFK to initiate the session. There is no indication on the agent's phone that supervision is in progress.

- Barge in – Once the call is connected, both participants in the call hear anything the supervisor says. The supervisor can transition to silent monitoring by pressing the Mute button on the phone.
- Whisper (Allworx 9202E and 9204 handsets only) – Sounds from the supervisor's phone are only heard by the agent and are not heard by the other participant. The supervisor's MUTE button controls audio going to the agent. The supervisor will not be able to initiate two-way communications with the other participant.
- Silent Monitor – Either party in the call does not hear sounds from the supervisor's phone. The Mute button on the supervisor's handset is enabled and is lighted red. The supervisor can speak to the participants of the monitored call at any time by pressing (disabling) the Mute button.

Important Notes

- The supervision call terminates when the original call ends.
- The supervision call terminates if the agent parks the call or puts it on hold.
- The supervisor can put the call on hold without terminating the supervision call.
- The supervisor cannot park or transfer the call to another phone.
- The supervisor can conference in another participant.
- The new conference participant must press their MUTE button to maintain the silence when in Silent Monitor mode. Otherwise, the participants will hear anything spoken.
- The agent will not be able to conference-in another party while the supervision call is in progress unless the agent is using an Allworx 9204 phone. The agent cannot initiate a conference during a supervised call in Whisper mode.
- The agent will not be able to record a call using Allworx Call Assistant during a supervised call unless the agent is using an Allworx 9204 phone. The agent cannot record a call during a supervised call in Whisper mode.
- The Call History on the agent's handset will not have any record of that call.
- The supervised calls appear as normal calls between stations in the server's Call Detail Records.

- The original call and supervised call displays as separate calls in the Live Calls and Call Assistant Active Calls tab.
- Whisper mode requires that the agent have an Allworx 9202E or 9204 Phone.

25 Business Schedules

Use Business Schedules to control playing the greetings for callers to the Auto Attendants based on the time of day, and to switch between Day and Night call routes for System Extensions. A Schedule consists of defined daily periods and their associated Day/Night Modes and Auto Attendant Greeting Names. The Allworx Server Administrator can define multiple schedules and configure each Auto Attendant or System Extension to follow any one of the Schedules you define.

In order to use Schedules to control Auto Attendant Greetings, perform the steps below. This document provides background and details in later sections.

To assign greetings:

1. Navigate to **Business** > **Schedules** > **Greetings**.
2. Click **+** by Greetings, and then click the **modify** link.
3. Assign a meaningful description to each of the nine numbered greetings (e.g. Open, Closed, Lunch, 3-day weekend) or number.
4. Click **Update** to save the changes.

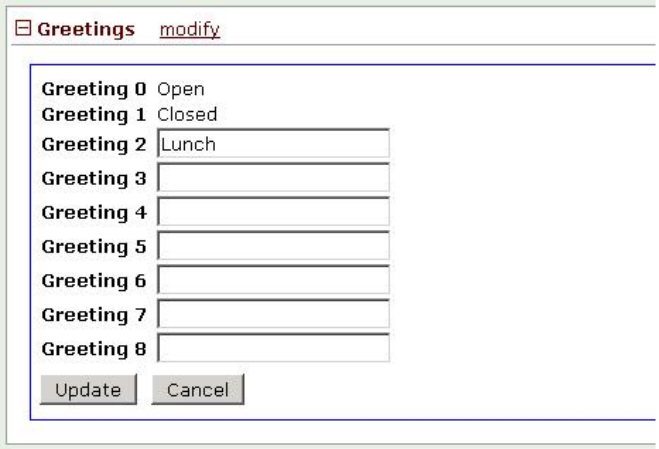
To create a weekly and holiday time schedule:

If assigning Auto Attendants to different departments or businesses that have different schedules, you can create a different schedule for each Auto Attendant.

1. Navigate to **Business** > **Schedules**.
2. Click **+** by Schedule 0: Default, and then click **copy**. A new schedule displays in the list.
3. Click the **modify** link, and update the schedule description.
4. Update the Mode/Greeting Control from the drop-down list; see Automatic/Manual Control on page 174.
5. Click **Update** to save the changes.

   If the Automatic schedule is selected, a daily calendar opens to assign Start, End, Mode, and Greeting requirements, see Greetings on page 177.

   Each Auto Attended and Business Schedule can use up to nine (9) different greetings. The greetings are numbered 0 – 8. Greeting 0 has a fixed name of "Open" and Greeting 1 has a fixed name of "Closed". You can assign names of your choosing to the other greetings (2 through 8). To assign greeting names navigate to **Business** > **Schedules**. Click **Modify** in the Greetings section.



While all Schedules and Auto Attendants share the same nine greeting numbers and names, each Auto Attendant can have its own version of the greeting audio. For example, the Auto Attendants are assigned to different departments, Auto Attendant 1 is to be used for Support that opens at 8:00AM and Auto Attendant 2 is for Sales that opens at 9:00 AM. When recording the greeting for use during the night, both can use the Closed Greeting (Greeting 1) but the recordings for the departments can be different. Auto Attendant 1's Closed greeting can say that Support will be opening at 8. Auto Attendant 2's Closed greeting can say that Sales will open at 9.

In this way, each Auto Attendant can have nine unique recordings for each of the nine standard Greetings. If all nine Auto Attendants are in use, they can have a total of 9 x 9 = 81 audio greeting files.

Note: The system supports playing additional messages. See Recording Auto Attendant Greetings and Messages on page 183 for additional information on Auto Attendant messages.

25.1 Automatic/Manual Control

The purpose of Business Schedules is to change Modes and Greetings automatically, based on the Allworx server's system clock. It is possible to disable the automatic control and manually change Modes and Greetings.

To switch to manual control:

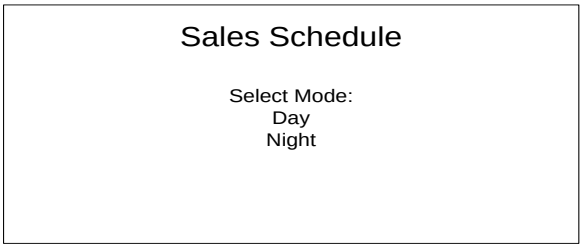
1. Navigate to **Business** > **Schedules**, and go to the Schedule you are configuring.

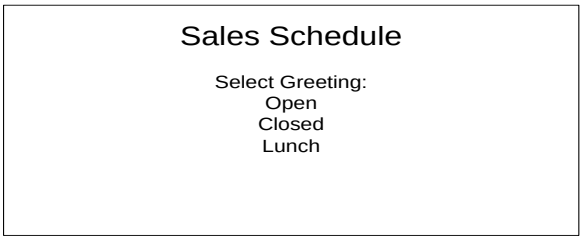
2. Click the **modify** link, next to Mode/Greeting Control for the Schedule you are configuring and choose **Manual** from the drop-down list box.

3. Click **Update** to save the changes.

Once configured for manual control, the Allworx Server Administrator can change the Modes and Greetings for the Schedule using either of the following options:

- Admin Control: To change: log into the Admin page, navigate to **Business** > **Schedules** page, and locate the Schedule you want to modify. Click **+** to open the schedule, and click the **modify** link next to the "Schedule is currently set to" line at the top of the Schedule.
- Define a Schedule PFK on a handset. To change: the user of the handset can press the PFK to set the Mode and Greeting. See Programmable Function Keys (PFKs) on page 83 for more information.





Note: Even if configuring the Schedule for automatic control, use a Schedule PFK to override the current Mode and Greeting. If overridden, control of the Mode and Greeting will returned to the Schedule when the next defined time period begins.

25.1.1 Assigning Schedules

If selecting the Manual schedule, the user must set the mode/green via the handset's schedule PFK.

To assign a schedule to an Auto Attendant:

1. Navigate to **Phone System** > **Auto Attendants**, locate the Auto Attendant that needs modification, and click the **modify** link.

2. Assign the schedule that you created for the Auto Attendant.

3. Click **Update** to save the changes.

4. Record each greeting using a handset, see Recording Auto Attendant Greetings and Messages on page 183, or import the audio greetings for that Auto Attendant that corresponds to the greeting(s) that you assigned to that schedule in Step 2. E.g. For Customer Support's Auto Attendant, create recordings for:

   - Open: "If you have billing questions, press 1 now …"
   - Closed: "Customer Support is now closed and will reopen at 8 am …"
   - Lunch: "We are closed for lunch and will return at 1 PM …"
   - 3-day Weekend: "We are closed and will reopen Tuesday Morning at 8AM."

5. Repeat steps 2 through 5 for any additional Auto Attendants that require a different schedule than the first one.

The steps above will change the audio recording that an incoming caller hears to be the appropriate one for the time of day.

Use Schedules to control the routing of System Extensions. For example, an extension that normally rings a group of users during the day can be set to go directly to voicemail at night. Perform the following steps to accomplish this:

1. Navigate to **Business** > **Schedules** to create a weekly and holiday schedule to use for an extension. If the schedule matches an existing one, you can use that and do not have to create a new one. The number of schedules that can be created is not limited so you can have a different schedule for each System extension.

2. Assign a Mode of Day or Night for each time period in the schedule,

3. Navigate to **Phone System** > **Extensions**, and locate the System (non-user) Extension.

4. Click the Video Call Routes link and go to the Extension Information section. Click the Modify link. In the configuration for the System Extension, assign the schedule that you are using for that System (non-user) Extension. <**Phone System** > **Extensions**>

5. Check the box for **Use different call routes for Day and Night Modes**, and click **Update** to save changes. The Day Mode and Night Mode configurations display.

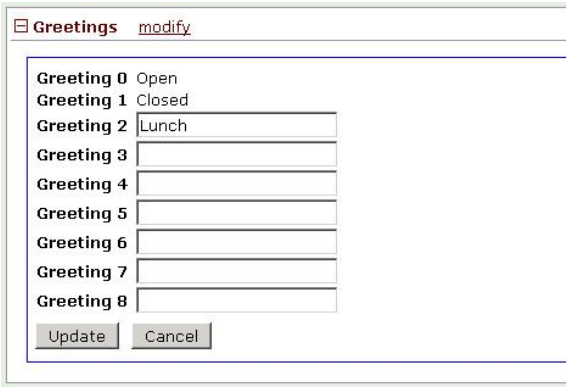
6. Click the **Modify** link to define the Day and Night call routes for the extension. For instance, the Day call route will ring the user group and the Night call route will go to voicemail.

7. Click **Update** to save the changes.

8. Repeat steps 1 through 5 for any additional System Extensions that require Schedule-based routing.

25.2 Greetings

Each Auto Attendant and Business Schedule can use up to nine (9) different greetings. The greetings are numbered 0 – 8. Greeting 0 has a fixed name of "Open" and Greeting 1 has a fixed name of "Closed". You can assign names of your choosing to the other greetings (2 through 8). To assign greeting names navigate to **Business** > **Schedules**. Click **Modify** in the Greetings section.



While all Schedules and Auto Attendants share the same nine greeting numbers and names, each Auto Attendant can have its own version of the greeting audio. For example, the Auto Attendants are assigned to different departments, Auto Attendant 1 is to be used for Support that opens at 8:00AM and Auto Attendant 2 is for Sales that opens at 9:00 AM. When using the recorded greeting during the night, both can use the Closed Greeting (Greeting 1) but use different recordings for the departments. Auto Attendant 1's Closed greeting can say that Support will be opening at 8. Auto Attendant 2's Closed greeting can say that Sales will open at 9.

In this way, each Auto Attendant can have nine unique recordings for each of the nine standard Greetings. If all nine Auto Attendants are in use, they can have a total of 9 x 9 = 81 audio greeting files.

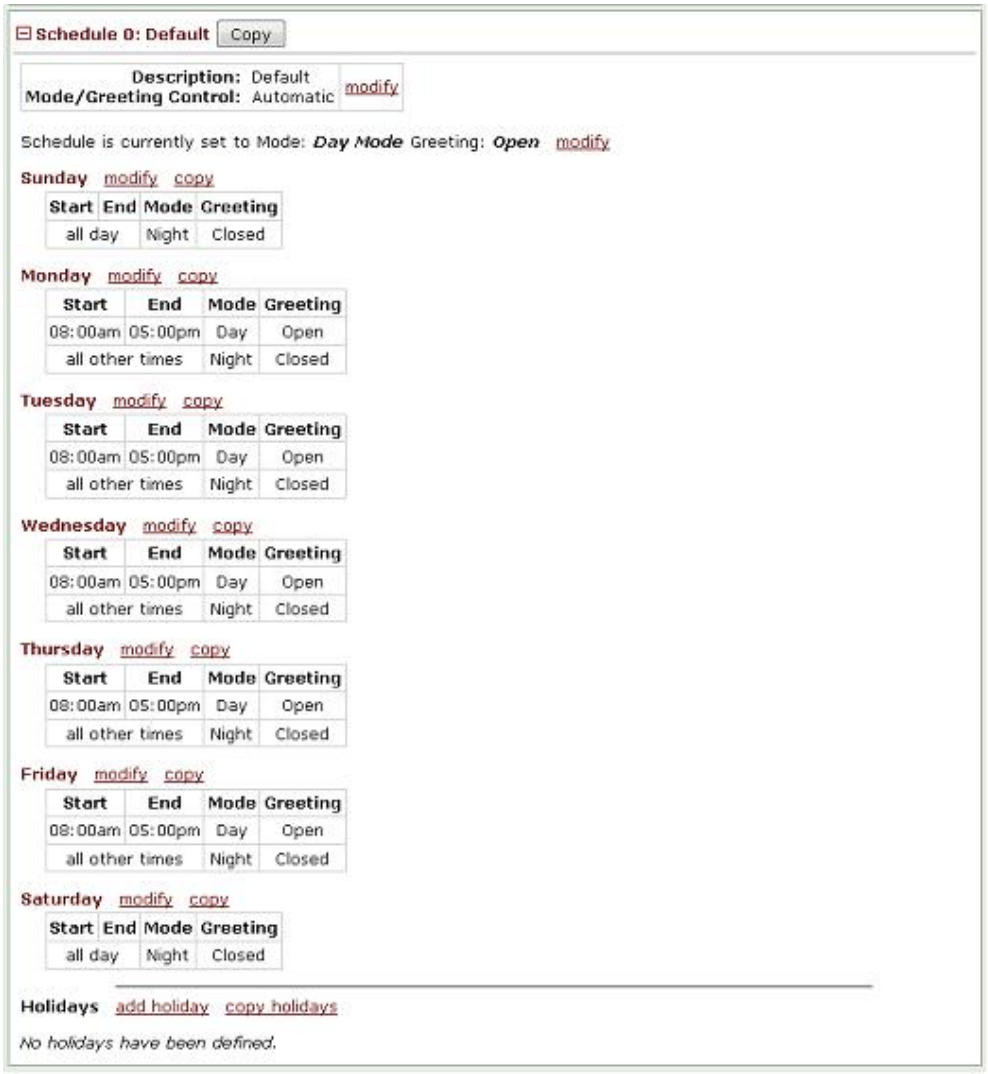
Note: The system supports playing additional messages. See Recording Auto Attendant Greetings and Messages on page 183 for additional information on Auto Attendant messages.

25.3 Creating and Modifying Schedules

The system defines a default Business Schedule (Schedule 0) at installation that users cannot delete. The pre-configuration is Open Monday through Friday, 8:00 – 5:00. Greeting 0 is assigned for the Open times. The system designates all other hours as Closed during which Greeting 1 for use.

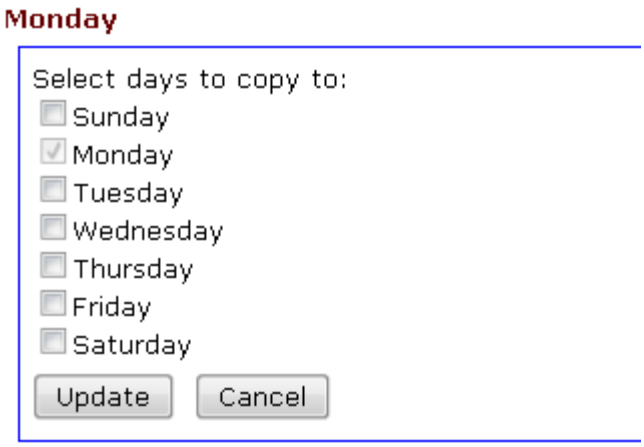
To view the details of Schedule 0:

1. Navigate **Business** > **Schedules**, and click **+** next to Schedule.



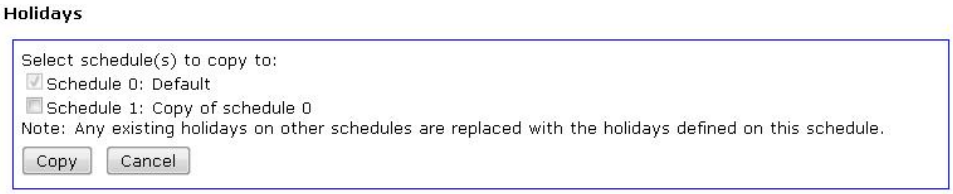
2. Click the **modify** link for any day of the week. You may change Start and End times, add new periods or holidays, assign Modes (See Call Routing Modes on page 180), and assign Greetings (See Greetings on page 177).

You can save steps by modifying one day and copying the changes to other days within the same Schedule. Click the **copy** link and choose the days that will use the same periods.



Create new schedules by copying existing ones (e.g. copy Schedule 0 to create Schedule 1). Click the **Copy** button next to any Schedule's heading and the system creates a new Schedule to modify for its intended use.

The Allworx Server Administrator can copy all of the holidays from one Schedule may to other Schedules. This is useful when setting up holidays with new dates for a new year when you already have several Schedules defined. To avoid having to manually update each Schedule with the holiday changes, update one of the Schedules, and then click its copy holidays link. The system presents a list of checkboxes for all of the defined Schedules.


Holidays
Select schedule(s) to copy to:
Schedule 0: Default
Schedule 1: Copy of schedule 0
Note: Any existing holidays on other schedules are replaced with the holidays defined on this schedule.
Copy
Cancel

25.4 Call Routing Modes

Assign one of two Modes (Day or Night) to each period in the Schedule. Use the mode to control the routing of calls to System Extensions (See Business Schedule Mode Routing on page 154). Assign a Schedule to any system extension, and then configure separate Day and Night call routes for the extension. Route calls to the extension based on the current Mode for the assigned Schedule.

26 Auto Attendants

Auto Attendants answer incoming calls automatically and help direct callers to the person or department they want. Callers can listen to a list of services and decide which one best suits their need, use the dial by name option to connect to an employee directly, or listen to the company phone directory for the extension of an employee.

You can set up from 1 to 9 Auto Attendants depending on customer needs. Each Auto Attendant can be assigned to one or more CO Lines, DID Lines, SIP Proxies, SIP Gateways, or Digital Lines. For example, one Auto Attendant can be used to answer calls for Sales and another for Support. In this case, route the Sales phone number to the first Auto Attendant and the Support phone number to the second.

Greetings can be recorded for each Auto Attendant and the greetings can be configured to change, depending on the time of day.

26.1 Configuring an Auto Attendant

1. Navigate to **Phone System** > **Auto Attendants**.

   The system numbers the nine Auto Attendants as 431 to 439†. The list of Auto Attendants shows the attributes assigned to each one.

2. Click the **Modify** link for the Auto Attendant to configure.

Field	Options	Prompt/Description (if applicable)
Description	N/A	Enter description of the Auto Attendant
Schedule	List of Business Schedules	Choose the Schedule you have created for switching greetings
Include Remote Users	enabled disabled (default)	For Multi-site networks. Enable this to include users from other sites in Dial-By-Name
Dial-By-Name Menu (#1)	disabled enabled (default)	Enables callers to type the spelling of a user's name based on the setting in the Dial-By-Name Spell Option field
Dial-By-Name Prompt	do not play play (default)	Prompt: Press #1 to dial by name.
Dial-By-Name Spell Option	spell first or last name spell last name spell first name	Select the spelling method for the Dial-By-Name option

† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

Dial-By-Directory Menu (#2)	disabled enabled (default)	Enables the caller to listen to a list of users and their extension and then enter an extension. Note: Dial-By-Directory will automatically be disabled if there are more than 50 users assigned to the Auto Attendant
Dial-By-Directory Prompt	do not play play (default)	Prompt: Press #2 for a listing of all users and their extensions. Note: Dial-By-Directory will automatically be disabled if there are more than 50 users assigned to the Auto Attendant
Dial-By-Director List Order	list in extension order list in name order	Controls the order in which the directory is spoken
Dial It Now Prompt	do not play play (default)	Prompt: If you know your party's extension you may dial it now.
End Call Prompt	do not play play (default)	Prompt: Press 9 or hang up to end your call.
Repeat Options Prompt	do not play play (default)	Prompt: Press * to listen to these choices again.
Speed Dial Numbers	Allowed not allowed (default)	(support for dialing 350-399, 34000-34999† from main menu) (listed as *250-*299 AND *24000-*24999)

The Allworx Server Administrator can configure the Auto Attendant to enable dialing digits 0 through 9 as single-digit Menu Shortcuts. Dialing the digit transfers a caller to a designated extension or another Auto Attendant. Select an extension in the drop-down menu for the corresponding digit. The default assignment is '0 – operator' †.

3. Click **Update** to save the settings.

† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

26.2 Recording Auto Attendant Greetings and Messages

In addition to the built-in prompts, Auto Attendants play either built-in or site-specific greetings. Users can record the greetings offline, and then import the greetings into the system See Importing Greetings and Messages on page 187 for more information. As an alternative, users can record greetings using their phone through the Message Center. Users can record nine (9) greetings and one (1) custom message for each Auto Attendant. The greetings, messages, and prompts are played in this order:

- Business Schedule Greeting – based on the current time of day (See Greetings on page 177).
- Custom Message (This does NOT change based on the Business Schedule)
- Other selected, built-in prompts.

Note: When a routing caller to an Auto Attendant after playing all prompts, if the caller presses * to hear the selections again, the Business Schedule Greeting is skipped.

To record a new greeting or custom message:

1. Dial the Message Center extension (404†).
2. Log in using your extension and password.

Note: If configuring the system for Dual Language Support, the new greetings and messages will be associated with the current language in this Auto Attendant. To record greetings and messages for an alternate language for use by this Auto Attendant, switch languages before proceeding to the next step

3. Press 9 to manage greetings, and then press 1 to manage Auto Attendant greetings.
4. Follow the prompts to record the greeting or custom messages for the desired Auto Attendant.
5. Press 1 to manage the greetings for the selected Auto Attendant.
   a. Enter the number (1-9) of the greeting to record.
   b. Press 2 to record a new greeting.
   c. Record the new greeting and press '#' when complete.
   d. Press 1 to save the greeting.
6. Press 1 to record additional greetings or press 1 to go to the previous menu to manage other Auto Attendants.
7. Press 2 to manage the custom message for the Auto Attendant.

Greeting	Sample Script
Greeting 0 (Open)	Welcome to <your company name>, your best source for <product>. Dial 1 for store hours and directions. Dial 2 for Sales. Dial 3 for Service. Dial 0 to reach the operator.
Greeting 1 (Closed)	Welcome to <your company name>, your best source for <product>. We are currently closed, but we will re-open at <opening time>. Our hours are <hours of operation>. If you know your party's extension, you may dial it now. You may also leave a message in our general mailbox at extension <number>.
Custom	<Your company name> is the premier provider of <products>. We specialize in <specialty>. Our latest product is . . .

26.3 Importing Auto Attendant Greetings and Messages

Import the off-line recorded greetings and messages onto the Allworx system as electronic files. The files use a particular internal format and have a specific file name format. The file names must use the following convention:

aa#x.snd, where:

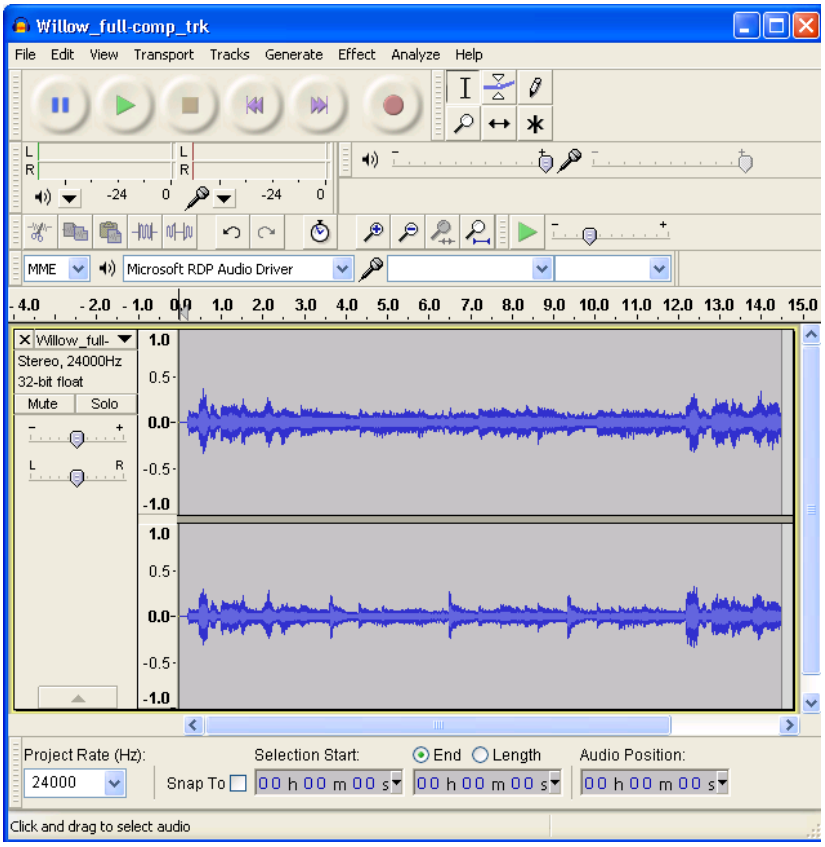
'#' is the Auto Attendant number '1' through '9',

'x' is replaced with the Greeting number ('0' through '9') or 'c' for Custom Message. (Use '0' for the Open Greeting, '1' Closed Greeting). For example, the filename for Greeting 0 (Open) for Auto Attendant 2 is "aa20.snd".

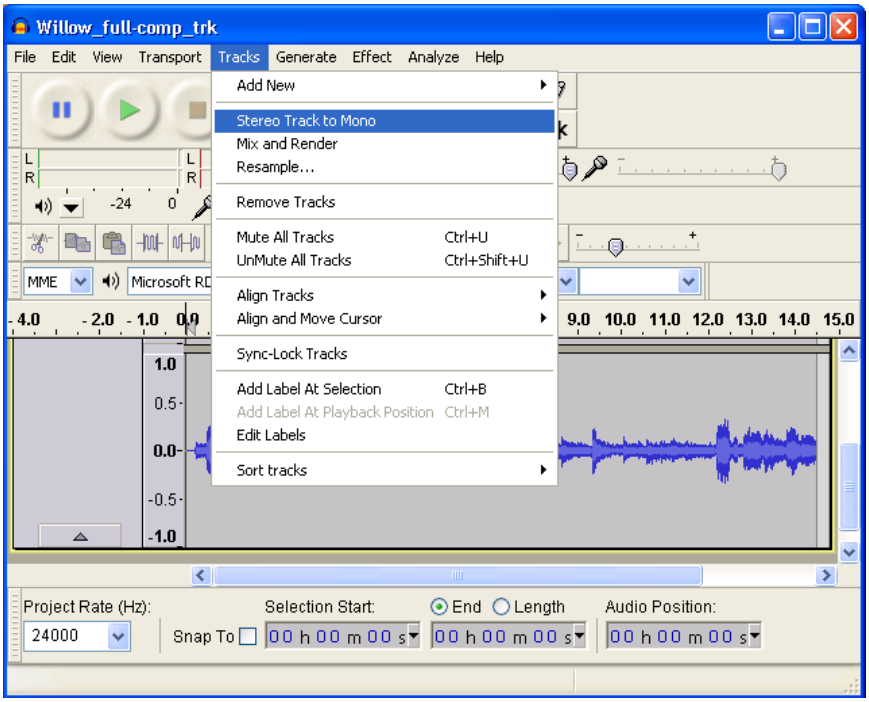
26.4 File Format Conversion

Files must be Telephony, raw, mu-law (u-law), mono, 8-bits per sample, 8KHz sample rate. There are a number of software applications exist to use to convert other formats into the required format. The following procedure uses the sound editing application Audacity (v1.3.14 Beta) to convert an mp3 file. Conversion of other formats is similar. Audacity is a free, open-source application. The application and associated user documentation is available at http://audacity.sourceforge.net:

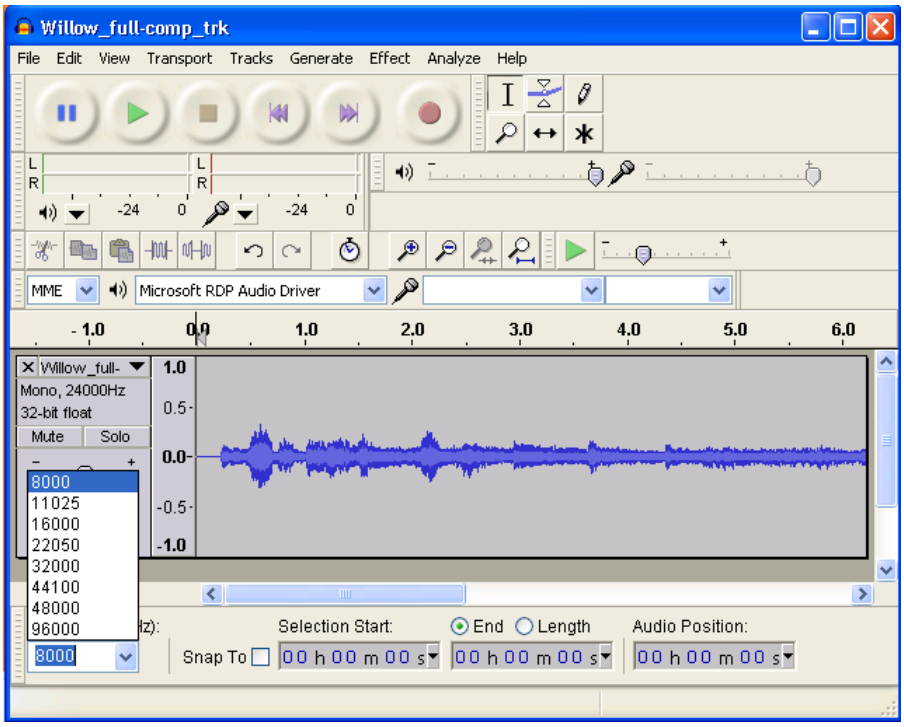
1. Open an mp3 audio file in Audacity.



2. Click Tracks > Stereo Track to Mono.

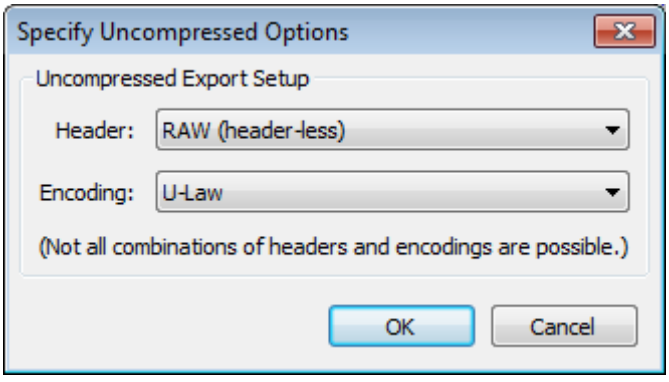


3. Change the Project Rate (Hz) value to 8000



4. Click **File** > **Export** > **Save as type**. Select the Other uncompressed files option.

5. Name your file with an .snd extension and select Options.

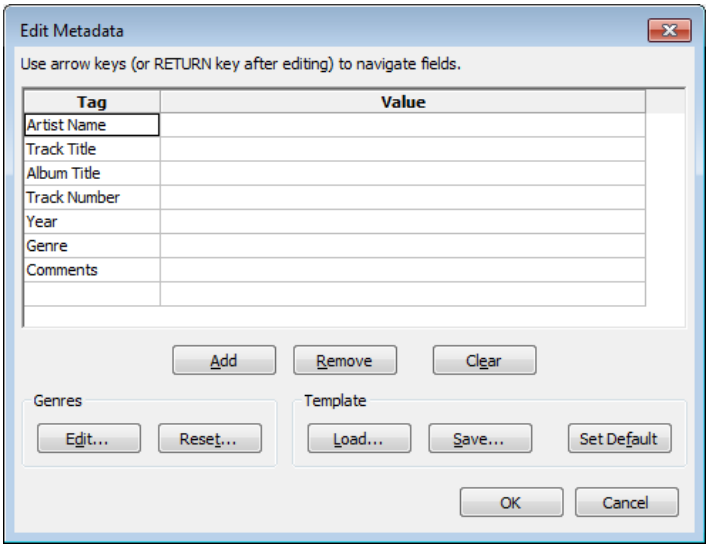


6. Change the settings:

- Header: RAW (header-less)

- Encoding: U-Law
- Then select the **OK** button.

7. Click **Save**.



8. Leave all fields blank, and click **OK**.

26.5 Importing Greetings and Messages

Use FTP to copy files onto the Allworx Server. This document does not discuss FTP file transfers.

To import the files:

1. Navigate to the local folder where the converted greetings and messages are located within the FTP program for the input folder.

2. Navigate to //<Allworx Server LAN IP Address>/prompts (e.g. //192.168.2.254/prompts) within the FTP program for the destination folder.

3. Transfer the greetings and messages files to the prompts folder using Binary transfer.

4. Go to the Allworx server admin page, navigate to **Phone System** > **Auto Attendants**.

5. Click the **manage** link at the top of the page. The Manage Custom Recordings page displays.

6. Click **Load** for Primary Language custom **reco**rdings. The files are available for use.

Note: If the Dual Language Support feature, click Load for the language in which the messages and greetings are recorded. See Chapter 30, Dual Language Support for more information.

26.6 Assigning the Auto Attendant to an Outside Line

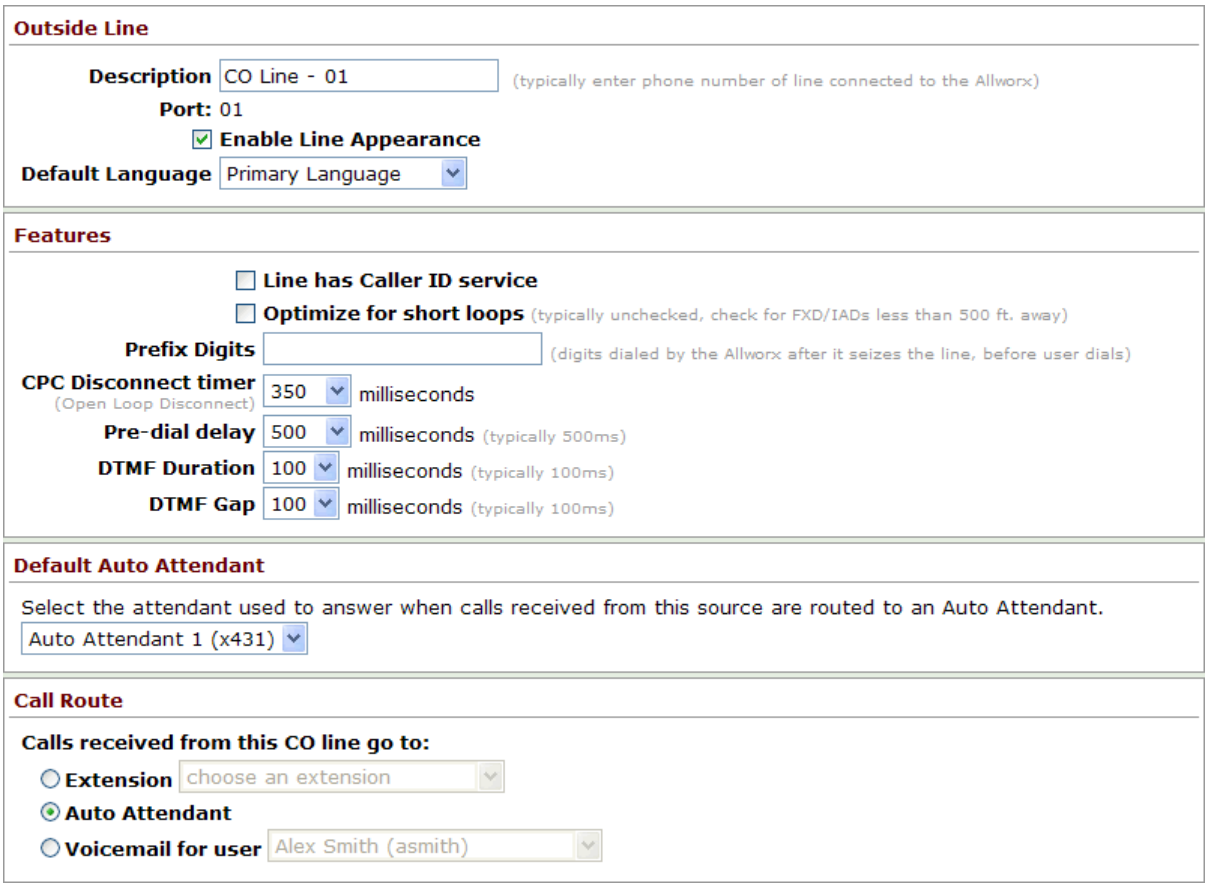
It is straightforward to select an Auto Attendant to associate with a particular outside line. The default Auto Attendant determines this setting when selected in the configuration of the outside line:

1. Navigate to **Phone System** > **Outside Lines**, and click **Modify** next to the outside line that you would like answered by the Auto Attendant.

2. Go to the Call Route section, and verify that Auto Attendant is selected.

3. Go to Default Auto Attendant; select the Auto Attendant you want to answer incoming calls on this line.

4. Click **Update** to save settings.



Follow the same procedure for any of the outside lines, including SIP Gateways and SIP Proxies.

27 Call Monitors

Call Monitors are call routing destinations that enable one call to ring multiple phones. Multiple calls can ring a single Call Monitor. Calls are answered in first in, first out (FIFO) order.

Features of Call Monitors:

- Ring multiple Allworx IP phones on the system with a single call.
- Stack multiple ringing calls to a single Call Monitor extension.
- Up to ten available Call Monitors.
- Configure Allworx handsets for multiple Call Monitors.
- Configure Allworx handsets for multiple occurrences of the same Call Monitor.
- Configuring a Call Monitor

27.1 Modify Call Monitor Description

The description of the Call Monitors can be modified by navigating to **Phone System** > **Call Monitors**, and then selecting Modify under Action. The system supports up to ten Call Monitors. Press Update to accept the new description and return to the Call Monitor screen.

27.2 Set up Call Monitor into Call Route

Call monitors are programmed into call routes via a selection on the call routing configuration screen. To assign a Call Monitor to a specific extension or call route:

1. Navigate to **Phone System** > **Extensions**.
2. Click **View Call Routes** under Actions for the particular extension.
3. Click **Modify** for the first Call Route.
4. Click **add a connection attempt**, if none are available.
5. Under First connection attempted (or any of the connection attempts), select the applicable Call Monitor from the drop-down list and select the number of rings.
6. Press **Update** to save changes.

Like all other call routes, Call Monitors can have multiple connection attempts and terminate when the user hangs up, transfers to Auto Attendant, transfers to voicemail, transfers to queue, and dials number, upon completion of connection attempts.

Note: Users can program one or more Call Monitors into a call route.

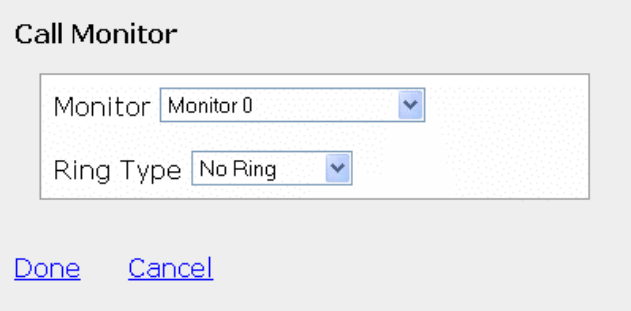
27.3 Call Monitor with an Allworx IP Phone

Configure the Allworx IP phones for the Call Monitor.

Configure the Allworx IP phone Programmable Function Keys (PFK) to display the status of and answer a Call Monitor. All phones with a PFK define for a particular Call Monitor will ring when a routing call to that Call Monitor.

To configure the PFK:

1. Navigate to **Phone System** > **Handset**.
2. Click the **View Configuration** link for the appropriate SIP Handset.
3. Go to the Programmable Function Keys (PFK) section, and click **Modify**.
4. Select Call Monitor from the drop-down menu for the targeted PFK.
5. Click define for this Key under the Type heading, the following pop-up displays:



6. Select the applicable Call Monitor for the PFK from the Monitor drop-down list, in the above example this is Monitor 0.
7. Set the Ring Type from the drop-down list. This sets a unique ring so that the user can distinguish Call Monitor calls from other calls to this phone.
8. Click **Done** to complete the assignment.
9. Click **Update** to save the new PFK setting.

In addition, the Allworx Server Administrator can program an Allworx IP phone to display:

- Multiple Call Monitors per phone to track more than one Call Monitor.
- Multiple occurrences of the same Call Monitor. This enables a user to take more than one call at a time from the same Call Monitor, so avoid missing additional calls while attending to the current call.

27.4 Configuring Calls to Route to the Call Monitor

A call enters a Call Monitor when routed from a system or user extension. Therefore, configuring the server so that inbound calls enter a Call Monitor is the same as configuring it for any inbound call routing. Use the same features for the handling of any inbound call to route a call to a Call Monitor:

Send the outside call to the Auto Attendant or route directly to the Call Monitor extension.

If the call goes to the Auto Attendant, a menu short cut can be set up to route the call to the Call Monitor extension.

See section18.2 Basic Routing in this document for information on setting up call routes. Both user extensions and system extensions can be set up to route a call to a Call Monitor.

Navigate to the **Phone System** > **Auto Attendants**. Go to the Auto Attendant you want to configure, and click the Modify link.

Example 1: Call Routing to Auto Attendant and then Call Monitor

Requirements	The inbound call will come in to the Auto Attendant. The custom Auto Attendant greeting will include, "For marketing, press 3." When the caller presses 3, the line will start ringing the Call Monitor key for the marketing group's phones.
Configuration	The inbound call will come in on an outside line. The outside line's call route is set to route calls to the Auto Attendant. A system extension is created for a Marketing monitor on the first connection attempt. Configure a Call Monitor Programmable Function Key for each of the marketing group's phones. An Auto Attendant custom-recorded greeting tells the callers to press 3 to reach marketing group. An Auto Attendant menu shortcut is configured so that digit 3 calls the Marketing group extension.

Example 2: Call Routing to Call Monitor and then Transfer to a Call Queue

Requirements	The inbound call will ring directly to a Support Call Monitor. If not answered, the call transferrs to the Customer Support queue.
Configuration	Create a Customer Support system extension using the Support Call Monitor on the first connection attempt and that will then transferred to the Customer Support queue. The inbound call will come in on an outside line. The outside line's call route is set to route calls directly to the Customer Support system extension.

28 Parking Orbits

Use Parking Orbits to place a call on system wide hold via a specially designated extension number so that any other handset in the system can pick up the call. For example, you can park a call from your office, then walk to another location in the building and retrieve that call at the new location. Parking is also useful when used in conjunction with Overhead or Zoned Paging such that another party may retrieve a call you have just parked.

The Allworx server supports parking up to 59 calls at one time. Each parked call is held in a Parking Orbit at an extension between 701 and 709† and 4950-4999†. When parking call, the system assigns the lowest available Parking Orbit number.

Servers in a Multi-site network can permit users at other sites to retrieve calls parked in its Parking Orbits. To enable this, the server must participate in Multi-site Parking Orbits. All sites that participate will share 150 Multi-site Parking Orbits at extensions between 4800 and 4949†.

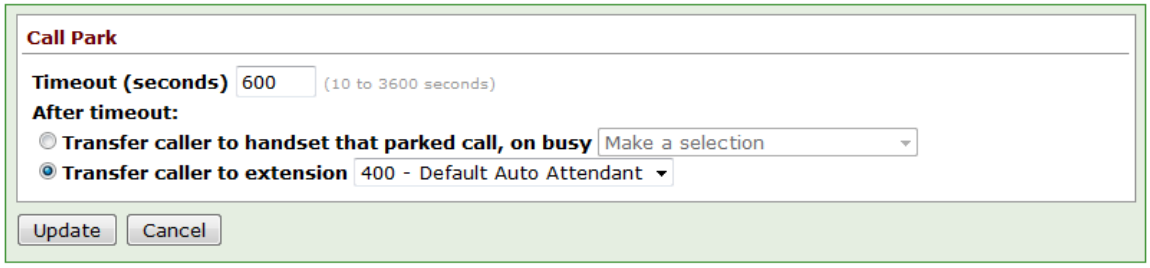
The Allworx Phone Guide describes placing and retrieving a call from a Parking Orbit. See the Advanced Multi-site Setup Guide for information to configure and release Multi-site parking.

28.1 Configuring Parked Call Timeout

To configure the Call Parking Orbits:

1. Navigate to **Phone System** > **Call Park**. The Call Park page displays.

2. Click the **modify** link, and the Call Park dialog box displays. The default **Timeout** duration is 600 seconds and the After timeout call routing is Transfer caller to extension 400 - Default Auto Attendant.



3. Update the Timeout (seconds) fields, and click the radio button to select an After timeout: option.

† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

Timeout (seconds) – enter a time from 10 to 3600 seconds that the call is in the parking orbit before the system sends a notification of the parked call.

After timeout: Transfer caller to handset that parked call, on busy - select an alternative extension in the drop-down list. This option routes the call to the selected extension, if the handset that parked the call is busy.

After timeout: Transfer caller to extension – select an alternative extension in the drop-down list. This option routes the call to the selected extension.

4. Click **Update** to save changes. The Call Park dialog box displays.

28.2 Configuring Parking Orbits PFKs

Parking Orbit PFKs monitor the status of a single Parking Orbit. A Parking Orbit PFK provides the following features:

- Indicate the parked or idle status of the associated orbit.
- Retrieve a parked call in the orbit by pressing the PFK.
- Provide a reminder of a parked call when the call has not been retrieved before a specified time limit.

To configure a Parking Orbit PFK:

1. Navigate to **Phone System** > **Handsets**.
2. Locate the appropriate SIP handset, and click **View Configuration**.
3. Go to the Programmable Function Keys (PFK) section, and click the **Modify** link.
4. Select Parking Orbit from the drop-down menu for the targeted PFK.
5. Click **define** for this Key under Type heading.
6. Select the Parking Orbit for this PFK to monitor from the drop-down list.
7. Set the Reminder Duration to ring the handset upon call being parked for this elapsed time
   - Enter 0 to disable the reminder.
   - Enter a period from 10 to 600 seconds.
8. Click **Done** to complete the assignment of the PFK settings.
9. Click **Update** to save all PFK assignments.

For the above changes to take effect, reboot the phone. See the phone configuration section for all other details about phone configuration.

28.3 Configuring Park Set Monitor PFKs

Park Set Monitor PFKs monitor the status of a set of Parking Orbits. They indicate if parked calls are in any of the selected orbits. A Park Set Monitor PFK provides the following features:

- Indicate if parked calls are in any of the configured set of orbits.
- Display a list of all parked calls that are in the configured set of orbits by pressing the PFK.

To configure a Park Set Monitor PFK:

1. Navigate to **Phone System** > **Handsets**.
2. Locate the appropriate SIP handset, and click **View Configuration**.
3. Go to the Programmable Function Keys (PFK) section, and click the **Modify** link.
4. Select Park Set Monitor from the drop-down menu for the targeted PFK.
5. Click **define** for this Key under Type heading.
6. Check the boxes for the Parking Orbits that this PFK is to monitor.
7. Click **Done** to complete the assignment of the PFK settings.
8. Click **Update** to save all PFK assignments.

For the above changes to take effect, reboot the phone. See the phone configuration section for all other details about phone configuration.

Analog, Allworx, and 3rd-party IP phones can be used to park and retrieve calls. However, only Allworx IP phones can be configured with Parking Orbit and Park Set Monitor PFKs and support parked call reminders.

Note: The only option for parking calls using analog phones or 3rd-party IP phones is by transferring the call to extension 700†. If doing an attended (or announced) transfer, the user hears the parking orbit number. In multi-site networks, Parking Orbit PFKs cannot monitor Parking Orbits on other sites. Use Park Set Monitor PFKs to monitor Parking Orbits on other sites.

Note: Parking Orbit and Park Set Monitor PFKs are not available for configuration on Allworx 9202E and Allworx Reach handsets.

29 Overhead Paging and Zoned Paging

The Allworx products support two related forms of Paging – Overhead Paging and Zoned Paging.

Overhead Paging: This audio goes out through the LINE IN/OUT jack or terminal block of the associated server. If used at a site, one typically hooks the LINE IN/OUT jack or terminal block to a paging amplifier or some sort of Public Address Announcement system.

Zoned Paging: This audio typically emits from a selected set of Allworx IP phones through their speakerphone speakers. A zone refers to each set of phones that emit the same class of pages. Each station can be in any combination of zones desired. Additionally, any combination of zones can be assigned to the Overhead Paging circuit so that those pages also play their audio out to the LINE IN/OUT jack or terminal block as referred to above.

Allworx systems support 10 paging zones via a single paging circuit. For this reason, only a single zone can have an active page at any one instant in time. Users attempting to place a page while another page is in progress will hear a fast busy.

29.1 Paging Amplifier and Door Release Relay

Allworx servers have an internal relay that controls a door release mechanism. This makes it possible to dial a phone extension to enable someone entry to a secured area. The relay contacts are available via the DB-9 connector (9-pin D shell serial type connector) or terminal block on the Allworx server. See the server's installation instructions for details.

When using the LINE IN/OUT jack, the relay operation mode must be configured on the **Phone System** > **Paging**. Go to the Paging Amplifier section, and click the Modify link to open the configuration page. The relay operation mode can be set exclusively to one of the following modes:

- Door Entry System – users can remotely activate a door entry system to enable access by dialing extension 403†. The relay is active for the duration of the phone call or five (5) seconds, whichever is shorter.
- Paging Amplifier –the paging amplifier system will automatically activate immediately preceding each overhead page and then turn back off once the page completes.
- Unconnected –completely disables the relay and it will not operate through either mechanism.

† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

29.2 Paging Zone Settings

NOTE: Users cannot add Reach handsets to page zones.

29.2.1 Paging Zone Names

The name assigned to each of the Paging Zones (0 - 9 and corresponding extensions 460 - 469†) can be modified to provide a meaningful descriptive name.

To change the names of the zone:

1. Navigate to **Phone System** > **Paging**.
2. Go to the Paging Zone Names section, and click **Modify** to open the configuration page.
3. Type a new description in the Name field corresponding to each Zone.
4. Click **Update** to save changes.

When changing the names of any Paging Zones, handsets with a PFK defined for those Paging Zones will not use the new name until after rebooting the handset.

29.2.2 Pre-page Tone

The default configuration for Paging Zone plays a tone before starting the paging message. Users hear a tone to indicate the channel is open and to begin speaking.

29.2.3 Multi-site Paging

Enable handsets to become part of paging zones that span multiple sites. For setting up Multi-site Paging, see the Allworx Advanced Multi-site Setup Guide, Release 7.5.

29.2.4 Paging Zone Operation on Handsets

Add or remove each applicable lineout and Allworx handset from each of the paging zones. The system default enables each applicable lineout and handset for Paging Zone 0 and disables all others on the handset configuration page. Options include:

- Pages always accepted.
- Pages accepted only while on hook.
- Pages never accepted.

If you change the zones for a handset, it is necessary to reboot the handset for the changes to take effect.

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† Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions are being used for the corresponding feature.

30 Dual Language Support

The Allworx server supports having a second language in addition to US English for audio prompts heard by users of the system. The Allworx Server Administrator can configure the system to play one language in particular circumstances and a different language in others. Callers can be permitted to switch between the two languages by pressing '##'. This optional feature requires the Dual Language Support feature key.

Note: Only the default audio prompts are available in languages other than US English. Text on the Web Admin pages and telephone displays are in English.

Some important aspects of Dual Language support:

US English is factory-installed as the Primary language. A Language Pack (available from the Allworx Partner Portal) can be installed and selected as either the Primary or Secondary language.

The system assigns points of origin of new calls (Outside Lines, Users, and handset Call Appearances) a language. The language is configurable but defaults to Primary.

The Allworx Server Administrator can configure the language of the prompts played by the following call applications in the Allworx system to use the language of the call's point of origin or override it with a specific language:

- Auto Attendants
- Conference Center
- Queues
- Follow Me
- Leaving Voicemail
- Message Center
- Phone Features (When Call Park, Call Forward, Do Not Disturb extensions are dialed)

The following applications can be configured to permit users to switch languages by pressing '##'.

- Auto Attendants
- Follow Me
- Queues
- Message Center
- Conference Center

Configure applications that enable switching to play a language change prompt, the prompt plays in the opposite language. That is, the prompt "To switch to English, press ##" will be spoken in English when played for an Auto Attendant that is configured with Spanish prompts.

Users record custom greetings and messages for Auto Attendants and Queues separately for the Primary and Secondary languages. Then save the recordings as Primary and Secondary, and are not associated with the specific language. Therefore, if using the actual language as Primary changes use the original Primary custom recordings will continue to be used when the system is using the new Primary language. The same is true for recordings assigned to the Secondary language. To re-

assign the Primary recordings to the Secondary language and vice-versa, export then import the recordings to the desired language.

Calls that come into the system from Remote Allworx servers will retain the language that used by the remote system, unless overridden by application language settings on the local server.

Note: All interconnected Allworx servers must run the same release of software and outfitted with the same languages.

30.1 Language Pack Installation

The system's default language is US English. Once the Dual Language Support feature key has been added to the system, additional languages can be installed.

To install an additional language:

1. Download the language pack from the software download page of the Partner Portal at www.allworxportal.com.
2. Unzip the download and copy the language pack (.alp) file onto the PC.
3. Log onto the Allworx Administration page.
4. Navigate to **Phone System** > **Languages**.
5. Go to the Language Pack Installation and Removal section of the page, click the **Browse** or **Choose** button.
6. Navigate to the location of the language file on the PC. Select the .alp file and click **Open**.
7. Click **Install**. After successful installation, go to Server Language Configuration, and click the **Modify** link.
8. Select the new language for the Primary or Secondary language, as desired.
9. Choose a second available language (e.g. US English) as the Primary or Secondary language, and then click Update. The Languages page displays.
10. Restart the server for the changes to take effect. Click the **Restart** link to view the restart options. Reboot the server in Normal Mode.
11. Log in to the Allworx Administration page, and navigate to the Languages page. Verify that the languages are configured, as desired. Using the procedures below, configure the system behavior.

30.2 Language Settings

30.2.1 Outside Lines

Each outside line has a default language. When receiving calls over an outside line, they are assigned the default language for that line. Thereafter, when the call reaches some applications within the server (e.g. Auto Attendant, Queue), the outside line language will be used or overridden, depending on the application's language setting.

Outside line default language can be set in the following locations:

- CO Line
- SIP Proxy
- SIP Gateway
- DID Routing Plan – Default route
- DID Routing Plan – Mapped extensions
- Digital Lines – Each line

Default Language choices:

- Primary –plays the prompts in the system's Primary language.
- Secondary –plays the prompts in the system's Secondary language, if installed.
- Use Source (DID Routing Plans only) –the prompts will be played in the language choice that was set for the outside line that is using the DID Routing Plan. For example, if a SIP Proxy's default language is Secondary and the default language of the extension mapped in the DID Routing Plan is Use Source; calls will be assigned Secondary as their language.

Note: In a DID Routing Plan, if a default language other than Use Source is selected, the DID Routing Plan's default language will override the Outside Line's language.

To set the default language for an Outside Line:

1. Navigate to **Phone System** > **Outside Lines**.
2. Choose the CO, Digital, SIP Gateway, or SIP Proxy to configure.
3. Locate the Default Language list box.
4. Select the desired setting from the drop-down list.
5. Click **Update** to save the configuration.

30.2.2 Other Sites in a Multi-site Network

The default language for calls coming from other servers in a multi-site network cannot be set. The remote server assigns these calls a default language. For the language

selection in a multi-site installation to work properly, all servers must be running the same software version and have the Dual Language Support feature key installed.

30.3 Call Appearances

Use Call Appearances to originate calls. Therefore, each has a default language setting. For each phone's Call Appearances, choose the language that best meets the needs of the user(s) of the phone. If a phone has multiple Call Appearances, the Call Appearances can be assigned different default languages.

When calls from the Call Appearance are routed to applications within the Allworx System (e.g. Auto Attendants, Queues, Conference Center), the Call Appearance language will be used or overridden, depending on the application's language setting.

To set the default language for a Call Appearance:

1. Navigate to **Phone System** > **Handsets**.
2. Locate the handset to configure.
3. Click on the **Modify** link for the desired handset.
4. Locate the Default Language list box.
5. Select the desired language from the drop-down list.
6. Click **Update** to save the configuration.

30.4 Call Applications

Various applications (e.g. Auto Attendants, Queues) within the Allworx system play audio prompts. The language behavior of the prompts can be controlled using the settings on the **Phone System** > **Languages** Web Admin page. Go to the Call application Language Settings section, and click the **modify** link to change the following individual settings:

30.4.1 Answer Language

Option	Description
Primary	Plays prompts will be plyed in the Primary language. This overrides the call's current language
Secondary	Plays prompts in the Secondary language, if one is installed. This overrides the call's current language.
Automatic	Plays prompts in the call's current language. For calls coming from an Outside Line or Call Appearance, use the default language of the call's origin. If calls came from some other application (e.g. the call came into a Queue from an Auto Attendant), the language used in the previous application (e.g. Auto Attendant) is used.

30.5 Allow Language Change

When a call reaches an application, this setting permits the caller to switch languages, if they desire. To permit callers to change language, for the desired application, check the box in the Allow Language Change box. To switch languages, callers must press the pound key twice (##).

30.6 Language Change Prompt

When a call reaches an application (except for when leaving a voicemail message or when using phone features), this setting controls whether a prompt to change language is played using the following options:

Option	Description
Always play	Every time a call reaches the application, in addition to the prompts that are normally played, the prompt to change the language is played (e.g. "To switch to English, press ##")
Never play	The prompt to change the language is not played. This is useful when the prompt to change language can be incorporated into a custom greeting or message. This option is not available for Follow-Me-Anywhere prompts.
If Needed	The prompt will not play if the caller has already had a chance to change languages in a prior application. For example, if a Queue's Language Change Prompt setting is If Needed and a call is routed directly to the queue from an outside line, the language change prompt would be played. If the call came through an Auto Attendant in which language changing was permitted, then the prompt would not be played. In this case, the prompt is not played because the caller already had a chance to choose their preferred language.

30.6.1 User Default Language

In addition to the settings already described, Allworx users have a default language setting. This language choice is used when accessing the Message Center and when receiving Follow-Me-Anywhere calls. If the Message Center Answer Language is Automatic, when a user logs into their Message Center account, the system uses the default language, without regard to the outside line or call appearance they used to access their account. Similarly with Follow-Me-Anywhere calling, if the Follow-Me external phone number is called from within the user's extension route, when the user answers the call, they will hear the prompts in their default language. However, if the Answer Language is set to Primary or Secondary, that setting will override the user's default language.

30.6.2 Custom Messages

Custom greetings and messages for Auto Attendants and Call Queues can be recorded, exported, and loaded for either or both the Primary and Secondary languages.

See Configuring an Auto Attendant on page 181,

Recording Auto Attendant Greetings and Messages on page 183 for information on recording greetings and messages. Information on exporting and loading custom message files is available within the Web Admin pages. Navigate to **Phone System** > **Languages** > **Manage Custom Recordings**.

30.7 Configuration Examples

30.7.1 Example 1

A company has some clients that are English speaking and others that are Spanish speaking. Clients call to speak to company employees that speak the same language as they do. English-speaking clients are given one phone number while Spanish-speaking clients are given another.

Configuration	System Primary Language=English System Secondary Language=Spanish CO Line 1: Default language=Primary, routed to Auto Attendant 1 CO Line 2: Default language=Secondary, routed to Auto Attendant 1 All applications: Answer Language=Automatic, Allow Language Change=Enabled, Language Change Prompt=Always play
Result	English-speaking clients call the English phone number (CO Line 1) and routes to Auto Attendant 1 where they hear English prompts as well as a prompt to switch to Spanish. Callers dial their representative's extension. All additional prompts will be in English such as the prompt to leave a voicemail or the Follow-Me-Anywhere prompt to record their name. Spanish-speaking clients call the Spanish phone number (CO Line 2) and routes to Auto Attendant 1 where they hear Spanish prompts as well as a prompt to switch to English. Callers dial their representative's extension. All additional prompts will be in Spanish such as the prompt to leave a voicemail or the Follow-Me-Anywhere prompt to record their name.

30.7.2 Example 2

A company has a Customer Support operation in which some technicians speak English and some speak French Canadian. The company has one incoming line for Customer Support calls.

In this example, the system directs all callers to the same Auto Attendant. English-speaking callers will dial a shortcut to a support queue serviced by the English-speaking technicians. French Canadian-speaking callers switch to a second Auto Attendant and then dial a shortcut to a queue serviced by the French Canadian-speaking technicians.

Configuration	• System Primary Language=English • System Secondary Language=French Canadian • T1 Language (all lines)=English • Auto Attendant 1: Answer Language=Primary, Allow Language

	Change=disabled • Call Queue 1: Answer Language=Primary, Allow Language Change=disabled • Auto Attendant 2: Answer Language=Secondary, Allow Language Change=disabled • Call Queue 2: Answer Language=Secondary, Allow Language Change=disabled Auto Attendant 1 has two shortcuts • Dial 1 for x432 (Auto Attendant 2) • Dial 2 for x4401 (Call Queue 1) Auto Attendant 2 has one shortcut • Dial 1 for x4402 (Call Queue 2) Auto Attendant 1 has a custom message that says: • "For French Canadian, press 1" (recorded in French Canadian) • "To speak with Customer Support, press 2" (recorded in English) Auto Attendant 2 has a custom message that says: • "To speak with Customer Support, press 1" (recorded in French Canadian)
Result	• Directs callers to Auto Attendant 1 where they will hear an English greeting, a prompt to press 1 for French Canadian, and a prompt to press 2 for Customer Support. • English callers will press 2 to enter Queue 1 where they will hear the greeting and status messages in English. An English-speaking technician will service their call. • French Canadian callers will be directed press 1 to enter Auto Attendant 2 where they will hear the full greeting and prompts in French Canadian including a prompt to press 1 for Customer Support. They will press 1 to enter Queue 2 in which they will hear the greeting and status messages in French Canadian. A French Canadian-speaking technician will service their call.

31 System Settings Import / Export

System Administrators will be able to transfer settings from one server to another by exporting the settings from one and importing them into the other. This will ease the task of upgrading a site from one Allworx server model to another model.

Not all settings transfer in this way. Import/Export is not a substitute for using Allworx OfficeSafe to backup the system.

31.1 Export

An export will include all configurable parameters for:

- Business Settings
- Users
- System extensions
- Handsets
- Allworx Port Expander (including all attached analog phones and CO lines)
- Outside lines:
- CO Lines
- Digital Lines
- SIP Gateways
- SIP Proxies
- DID blocks and routing
- Digital line configurations
- User Templates
- Handset Preference Groups
- Dialing Privileges Groups
- Network configurations
- VoIP server settings

To export settings:

1. Navigate to **Maintenance** > **Import / Export**.

    1. Go to the Export Configuration section and select from the following optional configuration settings:

    - Phone System Settings
    - Network Settings
    - VoIP Server Settings
    - SIP Proxy Settings

2. Click **Export** to export the selected configurations. This will place the current system settings into an XML file.

3. Click the **View** link to save the exported XML file for import on to another system.

    The server that is to receive the imported configuration settings should be "clean", meaning none of the above configurations have been added to the system prior to import. Update the internal dial plan and extension length to match the imported configuration before doing the import.

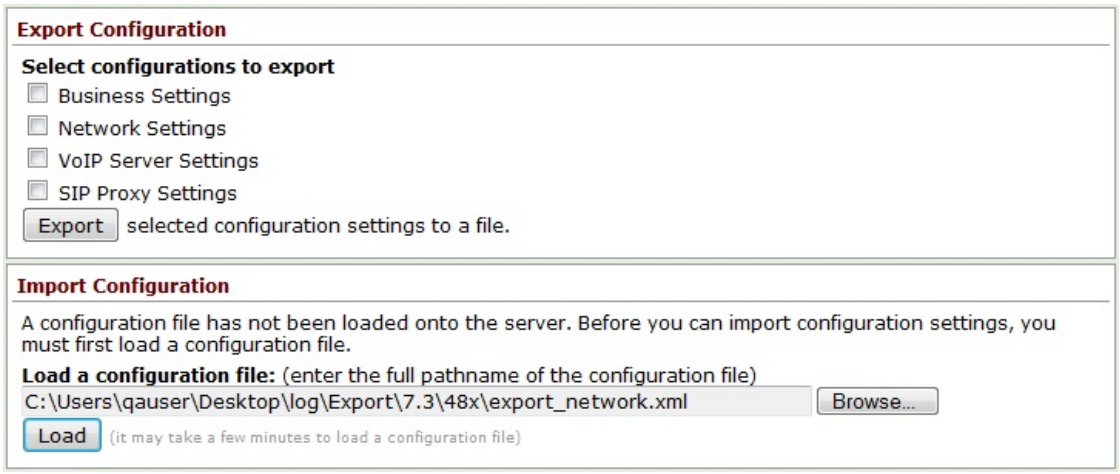
31.2 Import

To load the exported configuration settings of one server onto another:

1. Navigate to **Maintenance** > **Import / Export**.

2. Go to the Import Configuration section, and click **Browse** to locate the XML configuration file.

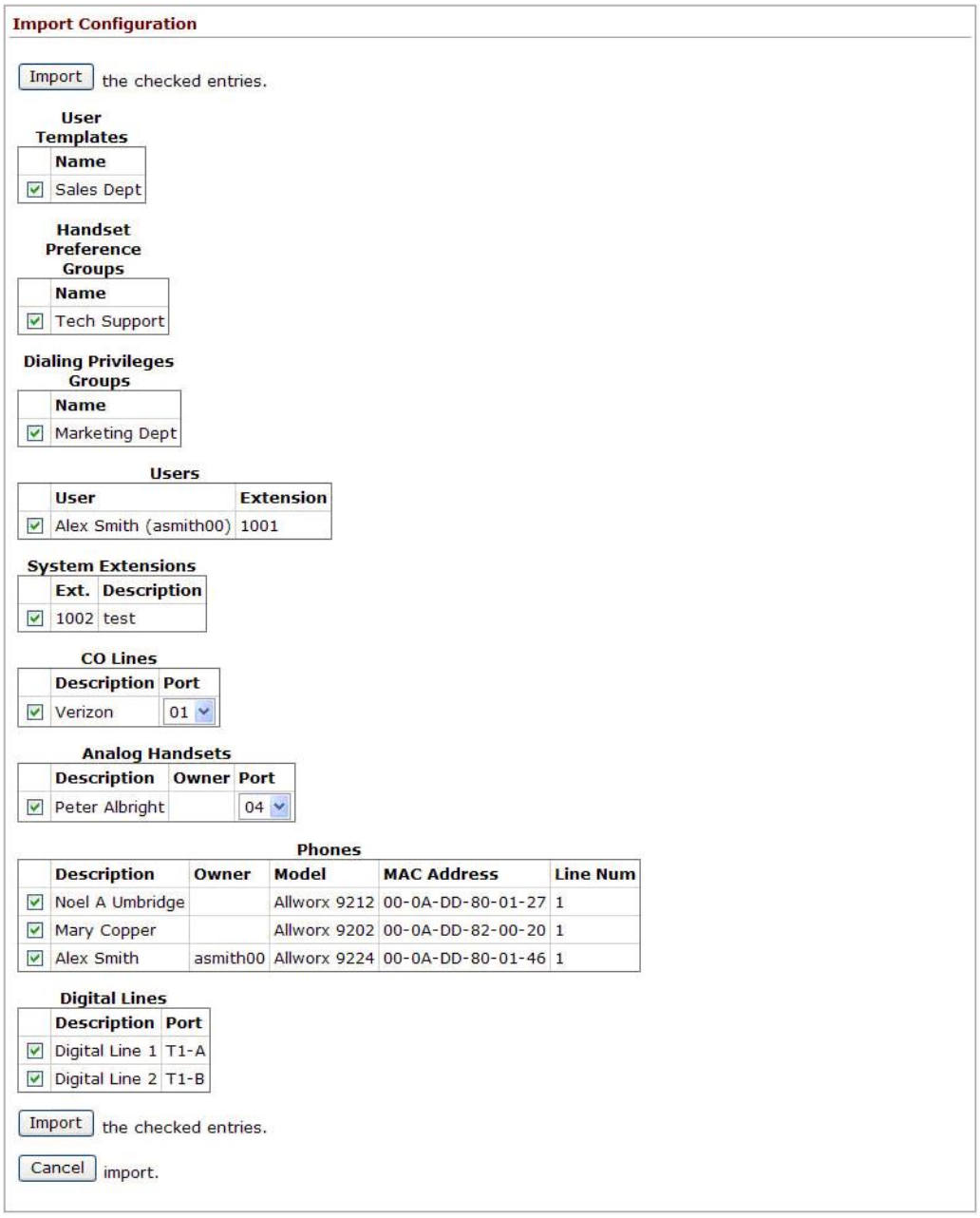
3. Enter the full pathname of the XML file into the Load a configuration file field and then click Load to begin loading the configuration file onto the server.


Export Configuration
Select configurations to export
Business Settings
Network Settings
VoIP Server Settings
SIP Proxy Settings
Export selected configuration settings to a file.
Import Configuration
A configuration file has not been loaded onto the server. Before you can import configuration settings, you must first load a configuration file.
Load a configuration file: (enter the full pathname of the configuration file)
C:\Users\qauser\Desktop\log\Export\7.3\48x\export_network.xml
Browse...
Load
(it may take a few minutes to load a configuration file)

   After loading the file, all the configuration settings to be imported display. The System Administrator can exclude parameters from the import by unchecking the associated boxes.

4. Uncheck the boxes of any unnecessary parameters.

5. Click **Import** to finish the import process.



31.3 Important Notes

- The Allworx Server Administrator can modify the port numbers assigned to native CO lines and analog handsets when importing the settings.
- When importing an Allworx PX 6/2 Port Expander, all configured CO lines and analog handsets from the export are included. The Allworx Server Administrator can modify the port assignments.
- DID blocks and routes plans and digital lines do not appear on the Import Configuration screen. These settings will always be imported when included on the export.

- Digital line fields PPP Username, PPP Password and PPP MTU are not included in the export.
- If the current system is not "clean" and has conflicts with the imported configuration settings, then conflicts will be resolved for the import settings in the following manner:
- Digits will be appended to user login names and incremented, starting at 01, as needed (e.g. jAdams will become jAdams01).
- Extensions change to the lowest available extension.
- Phones with conflicting MAC addresses will not import and all references will be removed (e.g. call routing and BLF PFK assignments).
- Analog phones with no available port will not import and removes all references (e.g. call routing and BLF PFK assignments).
- SIP handsets and SIP gateway station numbers may not preserve on an import. If changing station numbers for generic SIP phones or SIP gateways, then the new station number must be set up on each device.
- On Multi-site configurations, the Export will not include references to extensions, users or outside lines at remote sites.
- Imported extensions/users are limited to the total number available in the imported system. The order in the export file determines available extensions/users. If exceeding the imported server's extensions/user limit, the system disables the remainders and does not import.
- Do not modify the XML export file.
- Server with version 7.0 will export only user, system extension and Allworx handset parameters and only a subset of these parameters. Exports from 7.0 can be imported into servers with 7.1 or greater versions. Exports from 7.1 or greater cannot import into servers with 7.0.

32 Music on Hold

The system provides Music on Hold to callers in queues, calls held on phones, and parked calls. The Allworx Server Administrator can configure multiple sources and play different music to different callers.

32.1 Sources

Music can come from a Line In source or from electronic files stored on the Allworx server. To use a Line In source, consult the installation guide for your Allworx server. Download the installation guides from the Allworx Partner Portal (www.allworxportal.com).

32.2 Electronic Files

An electronic hold music file is available on the system. If a different style or a site-specific music track is desired it can be imported onto the Allworx server. As with other system audio (e.g. Auto Attendant greetings), files must be Telephony, raw, mu-law (u-law), mono, 8-bits per sample, 8KHz sample rate. To convert other formats into the required format for the Allworx server, see File Format Conversion on page184. Name the files in the following format:

moh_n_m.snd, where

'n' is a number between 1 and 30. This number must be unique among the music on hold files on the system. If importing a Music on Hold file that duplicates the number 'n' of a file that is already on the system, the system deletes the existing file.

'm' can be a user defined string that uniquely identifies the file. Valid characters include ('A'-'Z'), ('a'-'z'), ('0'-'9') and underscore.

For example, the file name could be "moh_1_sales.snd" or "moh_2_service.snd".

To import the files onto the system, see Importing Greetings and Messages on page 187.

The default music file provided on the system is: "moh_supplied.snd".

The playback of music on hold files repeats as long as there are callers on hold.

32.3 Converting Sound Files

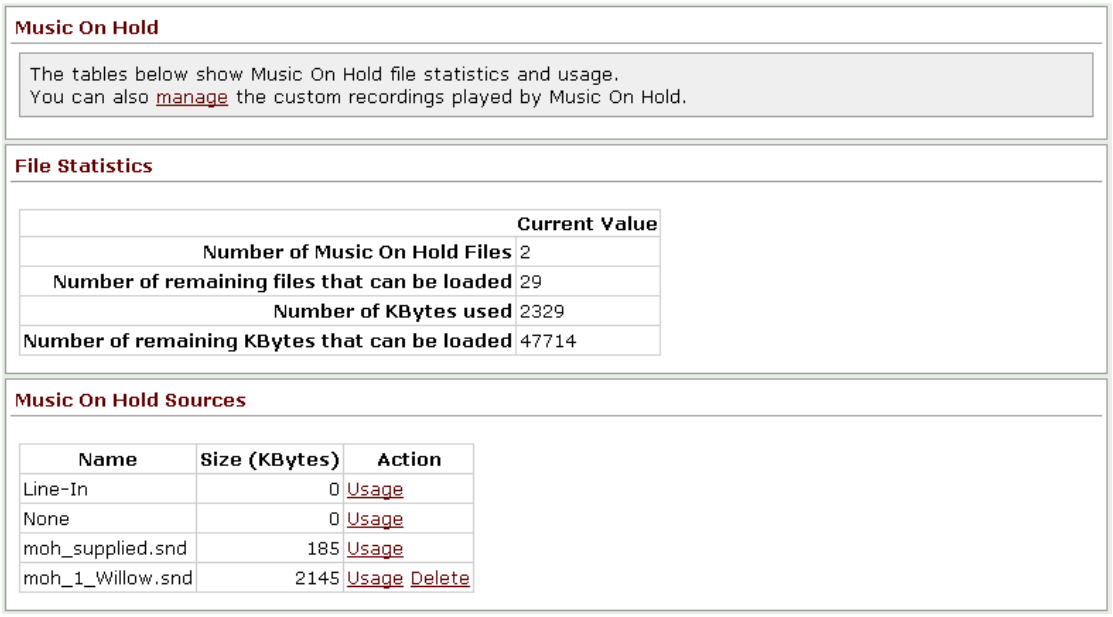
See File Format Conversion on page 184, for a procedure for converting sound files to the format required by the Allworx server.

32.4 Managing Music on Hold

Music on Hold is managed on the **Phone System** > **Music on Hold** page.

The File Statistics section displays the memory allocation for imported music files. The Music on Hold Sources section displays individual file details. In addition, it enables

assigning music sources to call queues, call appearances, and Handset Preference Groups. To assign a source, click the Usage link next to the desired source.



Music On Hold

The tables below show Music On Hold file statistics and usage.
You can also manage the custom recordings played by Music On Hold.

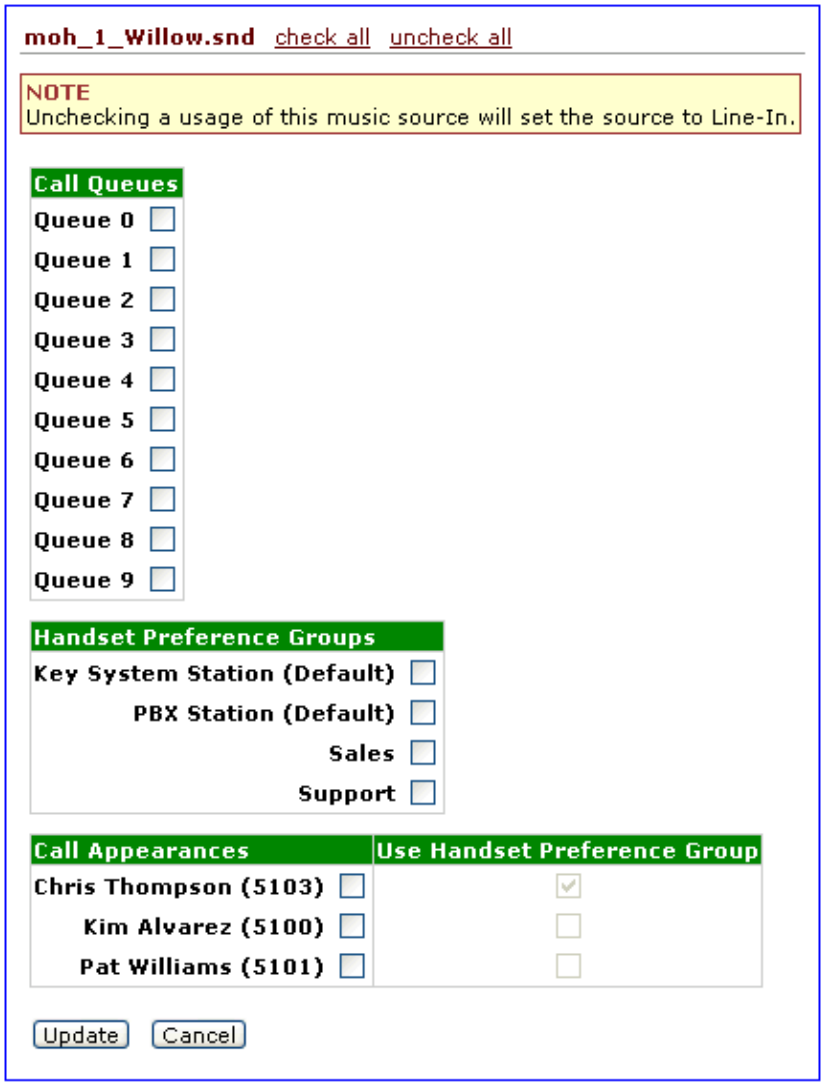
File Statistics

	Current Value
Number of Music On Hold Files	2
Number of remaining files that can be loaded	29
Number of KBytes used	2329
Number of remaining KBytes that can be loaded	47714

Music On Hold Sources

Name	Size (KBytes)	Action
Line-In	0	Usage
None	0	Usage
moh_supplied.snd	185	Usage
moh_1_Willow.snd	2145	Usage Delete

Check or uncheck the boxes for the desired elements. Unchecking the box for an element that is using the current source will switch it to Line In.



The Allworx Server Administrator can assign Music on Hold source on other pages, and can assign ACD Music on Hold on each queue's Modify page. Each Call Appearance's Modify page can assign the sources for Call Appearances.

Note: Allworx recommends assigning the sources to Handset Preference Groups over assigning them to individual Call Appearances. Assigning a source to a Handset Preference Group will update the Hold Music Selection preference setting for the group. To cause a Call Appearance to use the source defined in its Handset Preference Group, navigate to **Phone System** > **Handsets**. Modify the handset's Call Appearance and choose Use Handset Preference Group Setting for its Hold music Selection.

33 Abbreviations

Abbreviation	Definition
BLF	Busy Lamp Field
DHCP	Dynamic Host Configuration Protocol
DID	Direct Inward Dialing
DND	Do Not Disturb
DNS	Domain Name System
DOD	Direct Outward Dialing
DTMF	Dual Tone Multi-Frequency
FTP	File Transfer Protocol
FXO	Foreign Exchange Office
HTTP	Hypertext Transfer Protocol
IP	Internet Protocol
ITSP	Internet Telephony Service Provider
LAN	Local Area Network
NAT	Network Address Translation
PBX	Private Branch Exchange
PFK	Programmable Function Key
PoE	Power Over Ethernet
POP	Post Office Protocol
PPTP	Point-to-Point Tunneling Protocol
RTP	Real-time Transport Protocol
SIP	Session Initiation Protocol
SMTP	Simple Mail Transfer Protocol
SNTP	Simple Network Time Protocol
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
URI	Uniform Resource Identifier
VoIP	Voice over Internet Protocol
WAN	Wide Area Network

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